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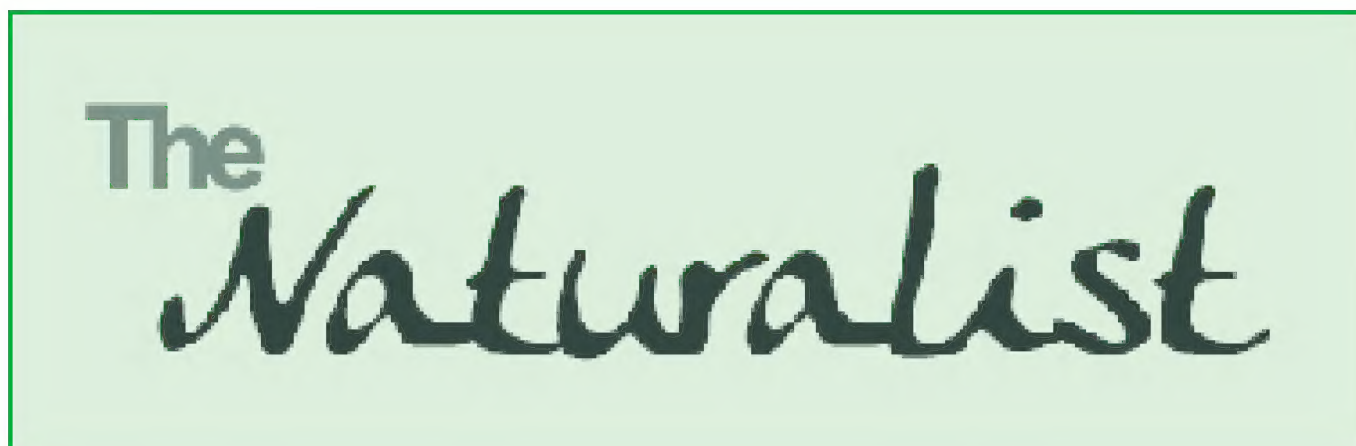
Vol. 148 No. 1112 April 2023

Contents	Page
The miners of Yorkshire: YNU Presidential Address Barry P. Warrington	1
The Story of Old Moor – Part 1. Eric Bennett	8
A survey of Bush-crickets in the Hull area* Africa Gómez	12
The long view of the flora of Potteric Carr Jim Horsfall	23
If you go down to the woods today, you're sure of a small surprise... A tardigrade survey in and around York Jane V. Thomas and Sam J. Buckton	29
Yorkshire Heteroptera – Part 3 Cimicomorpha 2 – Miroidea, Miridae – Bryocorinae, Deraeocorinae and Mirinae Stuart Foster	38
YNU Notice: YNU Editorial Board	45
National Whale and Dolphin Watch events 2006 to 2021: A review of Yorkshire records Colin A. Howes	45
Yorkshire Ichneumons: Part 15 W. A. Ely	50
Ephemera associated with the Yorkshire Naturalists' Union Steve Holliday	62
YNU Excursions 2023	63
YNU Notice: YNU Library & Archive	73
Errata	74
The City Nature Challenge 2023 is coming to Hull!	75
Notes on the discovery of insect illustrations by Dr Peter Skidmore (1936-2009) Colin A. Howes	76
YNU Calendar 2023	80

An asterisk * indicates a peer-reviewed paper

Front cover: The heterotardigrade ('armoured water bear') *Echiniscus testudo* var. *trifilis* photographed by Jane V. Thomas. (See p29)

Back cover: Aerial view of Potteric Carr Nature Reserve showing the range of wetland habitats. Drone operation and photography by Tim Prosser. (See p23)



The miners of Yorkshire: YNU Presidential Address

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For this address I will discuss 'the miners of Yorkshire'; if you are expecting to hear about men with dirty faces and pit ponies then you are going to be disappointed as I am dealing with mining flies in the family Agromyzidae. Some may be aware of this family of flies but for those who do not, here's a bit of background information:

- over 3,200 species worldwide,
- 424 species currently on the British list
- small flies, wing length between 0.5mm-6mm in length, most are between 1.5 and 3.5mm
- larvae of all Agromyzids feed inside the living tissue of plants
- larval feeding habits are quite diverse
- many species can be named by just the appearance of the larval mine and the host plant but most need to have the male genitalia examined to confirm the species

None of these flies has common names so there will be a few scientific names mentioned but I am keeping everything nice and simple. Figure 1 (p4) is a photograph of *Phytomyza hellebori*, a typical *Phytomyza* species. They are not the most colourful of flies but you can find some which are nearly all bright yellow, though most are generally dark and a bit dull.

Agromyzids are often called leaf-mining flies as the larvae usually feed in leaves, creating a 'mine'. The larva lays on its side whilst eating with the mouth-hooks shearing through the parenchyma cells like a scythe through grass. As the larva eats, a mine is created which is usually either linear, like that of *Phytomyza glechomae* (Fig. 2, p4), blotch-like such as that of *Liriomyza sonchi* (Fig. 3, p4) or some starting linear but then becoming blotches like with *Amauromyza labiatarum* (Fig. 4, p4). The shape of the mine is often unique to that species and you can put a name to many just by the mine's shape, the plant it is on and the arrangement of frass (larval faeces in the mine). The frass can be deposited in single, well-spaced grains like *Chromatomyia primulae* (Robineau-Desvoidy, 1851) (Fig. 5, p4), closely-spaced as in *Chromatomyia lonicerae* (Robineau-Desvoidy, 1851) (Fig. 6, p4), in really long continuous strips as in *Phytomyza bipunctata* Loew, 1858 (Fig. 7, p5) or in really messy clumps and strings like

Agromyza abiens Zetterstedt, 1848 (Fig. 8, p5). While most feed in leaves some use other parts of the plant, such as seeds, stems or flower heads and some also form galls, such as *Hexomyza simplicoides* (Hendel, 1920).

It is usually quite easy to spot leaf mines but those that feed in the stems or flower heads are much more difficult to find as the plant usually shows no external signs of damage at all.

Yorkshire Agromyzidae

The number of Agromyzidae species recorded in each vice county is pretty respectable:

VC61 – 202, VC62 – 80, VC63 – 198, VC64 – 88, VC65 – 50

VCs 61 and 63 are ahead of the others but this is just down to naturalists based in those areas dedicating some time to recording Agromyzids. As there are 424 species known in the UK, VCs 61 and 63 hold around 50%. In total, 260 species are currently known from Yorkshire, which is 60% of the British list, which is really quite good.

The most common species in Yorkshire is the Holly Leaf Miner *Phytomyza ilicis* Curtis, 1846, with around 2,500 records – you would do well to walk past a Holly bush and not be able to find the mines of this fly. A German student wrote a thesis on *P. ilicis* and discovered that the mines were statistically more abundant on the lower surface of the leaf in cities, whereas the mines were mostly upper surface in forests and woods. It is believed that this insect has evolved to reduce its risk of predation by tits, in that during the winter, when the birds come into the cities to use feeders/bird tables, by being on the lower surface, it makes the mines harder for the birds to find, whilst the reduced number of birds in the forests means that the larvae can feed normally on the upper surface.

The second most recorded Agromyzid is *Phytomyza ranunculi* (Schrank, 1803) with 757 records. It mines leaves of buttercups and some other related plants and the larvae can be found feeding in the middle of winter under snow, so it is a hardy little thing. Up until a couple of years ago it was thought to be just a leaf miner but I found that it can also feed as a stem miner as shown in Fig. 9 (p5) – a behaviour never seen before and which is quite remarkable when you consider that the fly was described in 1803 and is so common and widespread across the northern hemisphere.

Completing the top three species in Yorkshire is *Phytomyza chaerophylli* Kaltenbach, 1856, which mines Cow Parsley *Anthriscus sylvestris* and other closely related plants. Just like *P. ranunculi*, it can also be found actively feeding during winter and is usually present wherever its host plants are. There are 338 records for this species.

Moving on to the more interesting species found in Yorkshire. As things stand, there are 13 found nowhere else in the UK: *Cerodontha vinokurovi* Zlobin, 1994, *C. zuskai* Nowakowski, 1973, *Chromatomyia opacella* (Hendel, 1935), *Liriomyza obliqua* Hendel, 1931, *L. virgula* Frey, 1946, *L. yasumatsui* Sasakawa, 1872, *Melanagromyza galegae* Warrington, 2019, *Napomyza crepidicaulis* Warrington, 2021, *Phytoliriomyza nigrifrons* (Hendel, 1920), *Phytomyza arnicae* Hering, 1925, *P. schlicki* Spencer, 1976, *P. scotina* Hendel, 1920 and *P. trollii* Hering, 1930. I feel we should be proud to hold species that currently are not found anywhere else in the country and in fact, two of these were new to science so Yorkshire is turning up some great species; it's

just a shame that not many people know about them!

I am going to describe a few of these in more detail, starting with *Cerodontha vinokurovi* (Fig. 10, p5),– This was found in May 2020 in Anlaby just outside Hull. It is a small (wing length 2.5mm), typical looking fly for the genus but what made it stand out were the milky-white wings, which is very unusual in Agromyzids. The male genitalia did not match any of the other species known from the UK. As it was so unusual, a publication by Zlobin, which covers this sub-genus, had to be referred to but, unfortunately, it is in Russian. However thanks to someone in the YNU who put me in touch with someone who new the language and who kindly translated it for me, I could confirm a specimen as *C. vinokurovi*. This was described by Zlobin on the basis of just one female collected in Kutana, Eastern Siberia in 1987 – over 4,000 miles away. This was the first time it had been found since then and also the first time the male of this species had been discovered. It may well be present in other European countries, but as it stands, I think it's quite remarkable that this little fly has arrived here and is becoming established.

The site in Anlaby is private land and technically a little dangerous, so I had to get permission to collect on there from the land owners, East Riding Council. The field was mowed three or four times a year just to keep it looking 'tidy' which seemed ridiculous as the public were not allowed on and there are no health and safety issues. I sent several emails over several weeks to the council asking if they would consider changing their management of the site to benefit the biodiversity present and eventually I think they just got fed up of me and agreed to cut the area just once a year - a great result. Colas, who manage the site on behalf of the council, ran a little press release saying that the land had now become a Biodiversity site.

The next species is *Phytomyza scotina* (fig 11, p5), which was found for the first time in the UK at York Museum Gardens in 2017. This remains the only place in the UK where it can be found. It forms leaf-mines on *Salvias*. The mines were found in a butterfly border created in 1995 which had two varieties of *Salvia nemorosa* – Amethyst and May Night but only May Night had the mines. As another non-British Agromyzid also causes mines on *Salvias*, the mines had to be collected and reared so that an adult could be examined. Some leaves were popped in a bag and a few weeks later adults emerged and the male genitalia were examined, confirming *P. scotina*. The nearest known record comes from Germany but if any of you grow *Salvias* in your garden, it will be well worth checking to see if they have leaf mines. If so please let me know.

Another species which can only be found in Yorkshire is *Phytoliriomyza nigrifrons*. This was found in the UK for the first time in 2019, with a female collected from Hessle foreshore (VC61). No males have ever been found and nor has the larval stage so it is a real enigma, even though it was described back in 1920 when it was found in Croatia. It is only known from three other regions, the Azores, the Canary Islands and Portugal, so the nearest is about 1,000 miles away.

The next four species that are only known from Yorkshire are all from the same location – Malham Tarn in VC64. *Chromatomyia opacella*, *Phytomyza arnicae*, *P. schlickli* and *P. trollii* were all caught by David Henshaw in the 1980s using yellow pan traps. Yellow pan traps are often a good way to collect agromyzids and other insects. If you have never come across these before they are just bright yellow bowls filled with slightly soapy water and then left on the ground. There is some doubt about the record of *P. arnicae* because it's only known host plant, *Arnica* (Mountain Tobacco) is not known to occur in the UK but, of course, it may well use other plants

that we are not aware of yet.



Fig. 1 *Phytomyza hellebori*



Fig.2 *Phytomyza glechomae* on Ground Ivy



Fig.3 *Liriomyza sonchi* on Sow-thistle



Fig.4 *Amauromyza labiatarum* on White Dead-



Fig.5 *Chromatomyia primulae* mine on Primrose



Fig.6 *Chromatomyia lonicerae* mine on Snowberry



Fig.7 *Phytomyza bipunctata* mine on Globe

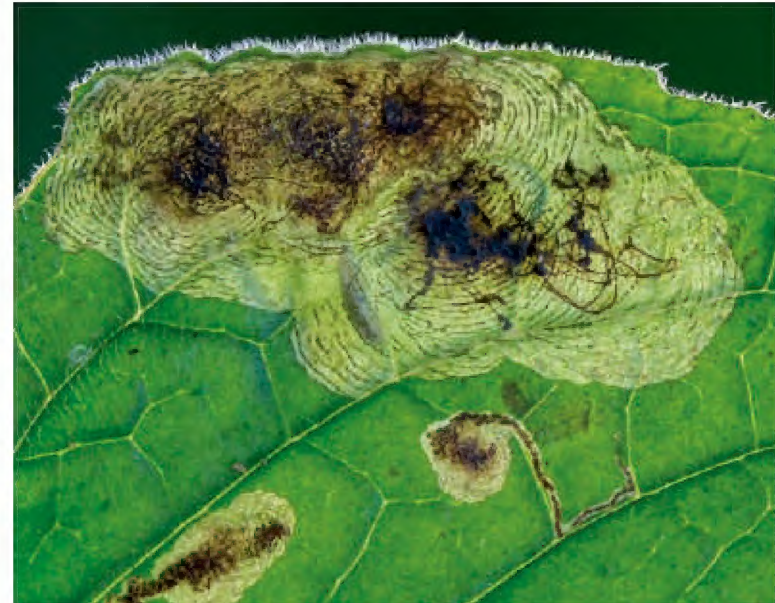


Fig.8 *Agromyza abiens* on Alkanet

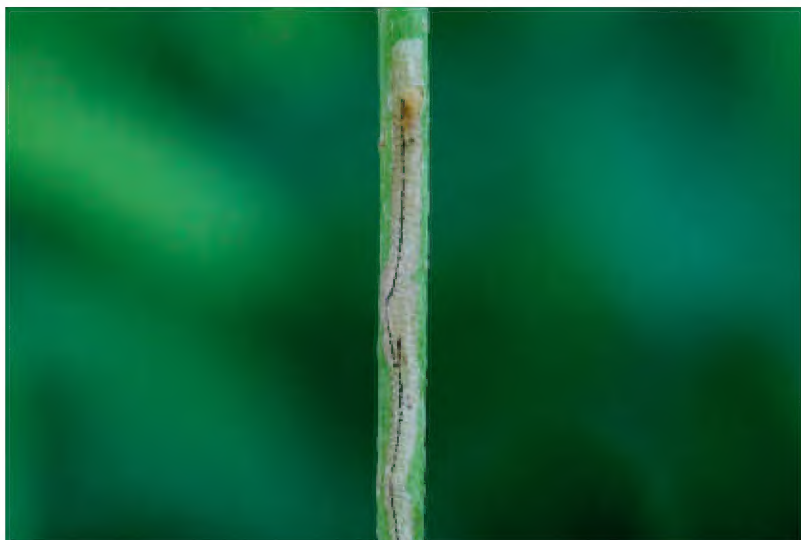


Fig.9 *Phytomyza ranunculi* as a stem borer



Fig.10 *Cerodontha vinokurovi*



Fig.11 (above) Male genitalia of *Phytomyza scotina*



Fig.12 (right) *Melanagromyza galegae*

Liriomyza yasumatsui was discovered for the first time in the UK when an adult male was collected at a brownfield site in Hull in 2018. It forms mines in Mugwort leaves and I have included this as it highlights nicely the importance of rearing Agromyzids as described previously.

The more people who rear leaf mines, the better, as it often throws up really interesting results. The next species really epitomises what rearing can achieve.

This is *Melanagromyza galegae* (see Fig 12, p5), new to science, which was discovered when it was reared from the stems of Common Goat's-rue *Galega officinalis* at a brownfield site in Hull. Unless you subscribe to the journal *Dipterists Digest* this is probably the first time you will have heard about a new species here in Hull. The site where it was discovered is not the most appealing of places, behind some industrial units, where usually there's a tethered horse and is very popular with the local dog walkers. Nevertheless, it is quite diverse and it does have some interesting flora and fauna. Apart from Knapweed, the most abundant plant present is Common Goat's-rue, a quite attractive member of the pea family.

I noted earlier that some Agromyzids feed inside stems and *Melanagromyza galegae* is one of those. It was discovered when some stems had been cut at the base and there were signs of feeding damage, which could have been caused by the many other insects which feed inside stems. These stems were very carefully split open and at the first node of every stem which had these feeding tunnels a puparium of about 3mm was found. When these were examined the distinctive horn-like posterior spiracles showed that the fly belonged to the genus *Melanagromyza*. Goat's-rue is known to be a host for just a couple of really common leaf miners but no stem-feeding ones. It could have been a case that a common *Melanagromyza* was using Goat's-rue for the first time as new host plants for Agromyzids are quite frequently discovered. However the posterior spiracles did not match those of any British species.

Dozens of stems were collected in the winter and the following spring the adults started to emerge. When these were examined both externally and internally, as with the male genitalia, it confirmed they were not one of the species on the British list at the time. It was then a case of comparing these flies to all known *Melanagromyza* species worldwide, about 400 species; after much work, none matched these flies from Hull so it was confirmed as a species new to science and was named *Melanagromyza galegae*, after its host plant *Galega*. The discovery was published in 2018. Five years later it is still doing well at the site in Hull. Unfortunately the site is ear-marked for development which is a great shame, but I am quite sure that if this plant is examined wherever it is present, *M. galegae* is likely to be there too. So just by being curious and having a willingness to rear agromyzids, a new species was discovered, showing there is still so much out there we do not know about yet.

I hope this brief discussion has shed some light on just some of the special species of Agromyzidae that can be found here in Yorkshire and nowhere else in the UK, and that you do not need to travel to far-flung locations to make exciting discoveries. As I mentioned earlier, many naturalists record leaf mines and it is quite addictive once you get into them. If this little overview has sparked an interest, I will quickly cover what resources are available and how to submit any records you make.

There are two resources I would recommend. One is www.leafmines.co.uk, which covers all

leaf-mining insects - beetles, flies, moths and sawflies. It is managed by Rob Edmunds, who runs the leaf miner moth recording scheme, so the site is more focussed towards moths but is still a really good all-round website. The other website is that of the National Agromyzidae Recording Scheme, which can be found at <https://agromyzidae.myspecies.info>.

I set up the National Recording Scheme back in 2016 and it soon became apparent that as there are no books for these leaf mines, people were relying on some websites which unfortunately are not accurate, based on really old literature or using problematic keys as mentioned earlier. Therefore I spent about three years creating this website which is by far the most up to date and reliable resource there is for Agromyzids. It covers every species and for each one it describes the mine, lists all known host plants, any confusion species, phenology charts, distribution maps and descriptions of the puparium and adults. There are around 1,500 images which cover the leaf mines, stem mines, male genitalia and the adult flies. The website is almost real time so if a record comes in for a species which is new to a vice county, the map is updated straight away. For anyone recording Agromyzid mines, probably the most important part of the website is the recording grade given to each species. This lets a recorder know how easy it is to record a species based on the larval stage.

Each species whose lifestyle is known is given a grade:

- Grade 1 is easily identified by inexperienced recorders or beginners
- Grade 2 care should be taken due to possibility of other causers
- Grade 3 difficult to determine, rearing advised
- Grade 4 can be determined by examining larva or puparium
- Grade 5 rearing adults is essential
- Grade 2,5 which means that on certain plants it is readily identified but not on others

These grades were compiled based on the knowledge gained from thousands of reared specimens by past and present workers, some of which were never published. By following these grades you are much better equipped to make more accurate records and so not suffer the disappointment of having a record rejected once it has been submitted.

Any records you do make ideally should be submitted using iRecord, which is where I will then verify them. All records must be supported by a photo. Initially some recorders weren't too happy about this but it is fully justified as even the most experienced recorders make mistakes. As a recent example, a record was submitted of *Phytomyza glechomae*, which is a Grade 2 species so a relatively easy one to ID based on the mine. This came from a very experienced county moth recorder who is also knowledgeable about Agromyzid mines and had previously recorded this species about 50 times. When I saw the supporting image it was clear that it was not that species. It was actually a moth mine, so the record was rejected and the recorder was informed why.

So by getting out there looking for leaf mines and submitting records, even for the most common species, you are making a valuable contribution to the study of these flies. I am always happy to answer any queries so you can either get in touch via Twitter or by email using the address at the top of this article. I hope you have found this address to be of some interest as I do appreciate it is quite a niche subject. If it has inspired anyone to get out there looking for leaf mines, then that would be amazing.

The Story of Old Moor – Part 1

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The background

Old Moor, now a successful RSPB Reserve located in the Dearne Valley in Barnsley, is at the centre of a group of sites forming the Broomhill Ings SSSI. Several of the sites, including Broomhill Flash and Wombwell Ings, have been known for many years because of their importance for birds. This paper covers the early formative years of their development between 1986-1999, prior to the takeover by RSPB in 2003. For practical reasons the account will be serialised in successive editions of *The Naturalist* commencing in this edition with the origins and early part of the story. Further issues will describe the design process and implementation in some detail.

My earliest memories of Old Moor were in 1986. By that time, I had been working in the Planning Department in Barnsley for about ten years on derelict land reclamation projects, where wildlife benefit could be made. I was also heavily involved in projects like Carlton Marsh Nature Reserve from 1976 through to the 1990s when it became the first Local Nature Reserve declared by Barnsley MBC.

The former Environment Department of South Yorkshire County Council dealt with environment issues and ecology under the management of Roger Mitchell. On the 1st April 1986, South Yorkshire County Council was abolished, and services passed to the four Districts. A new team was set up in the Planning Department in Barnsley and Malcolm Parker from the defunct County Council was appointed Group Leader. During that process I was offered the option of moving across to join the new team concentrating on conservation issues.

One of the first tasks of the new Countryside Unit was to carry out a full assessment of the Borough's wildlife habitats and their potential. Barnsley was the only district in South Yorkshire without a Biological Records Centre. We had inherited a lot of Phase 1 habitat survey data and a number of sites identified as being of local significance in 'A Review of Nature Conservation in South Yorkshire' (South Yorkshire County Council 1981) but we had no up-to-date information on their current condition. Bill Ely from Rotherham Museum kindly helped us out with a trial copy of a new biological recording package he was developing called 'Recorder' and we acquired a computer to use it on.

In 1988-89, a new Phase 1 habitat survey was conducted for the whole of the Barnsley district highlighting areas of particular conservation interest giving up-to-date information on the condition of the most important sites. In 1990, Maggie Bignall (MRB Ecology) was tasked with evaluating the most important sites representing a range of habitats within the borough with recommendations for any action required to safeguard their interest. A list of potential sites was taken from the earlier report and each of these was surveyed with a standard methodology. Sixty-nine sites were deemed to meet the required standard and were known as Natural Heritage Sites (NHS). They were documented to produce a site information package containing details of important species and habitats, outline management prescription, constraints, and opportunities.

Aside from our main work we also got involved in Planning Applications from time to time, usually to give comments on environmental aspects of applications or to suggest mitigation measures. Sometimes we were able to see an opportunity for something better, where interesting sites could be safeguarded or even acquired. Examples include some of the sites in the vicinity of Old Moor where parts of proposed development areas could not be built on because of flood risk issues and so we managed to negotiate their dedication to the Council. Park Hill Brickworks and Doveside were examples of this. Gypsy Marsh came to us by way of the Dearne Valley Parkway scheme. These were good examples of sites that we managed to create around what would later become the Broomhill Ings suite of reserves.

We also organised and supported a conservation liaison group with all the voluntary naturalist groups in the district. We were able to keep them aware of any developments that might interest them and to focus the wide spread of experience on a particular issue if it became necessary.

Early developments around Broomhill

Wath Ings and arguably most of the wetlands in the Dearne Valley were originally created by mining subsidence, possibly as early as the 1930s. The concrete roads were constructed to serve the site as a stocking ground for surplus coal from Wath Manvers and a large part of the site was still covered by a residual coal carpet.

Birding first started on Wath Ings in the 1950s when Alan Archer, Colin Bower and Terence Kilburn apparently stumbled on it during a bicycle ride. On their next visit they were joined by Michael Clegg, presenter of 'Clegg's People' on ITV's *Tonight* programme. Michael was also credited with discovering Broomhill Flash from the top deck of a passing bus. Around the same time Harold Crookes joined the group. Dave Standring, Phil Wordsworth, and Ivan Martin were also among the Wath Pioneers. It is certain that without the hard work of this group Wath Ings or Old Moor would not exist today.



The original Wath Ings Hide, Summer 1993

In the mid 1970s Yorkshire Wildlife Trust (YWT) took over management of the site as a nature reserve. The first hide, the now famous Wath Hide, was erected in 1975 by Dave Standring. The YWT had a tenancy from the National Rivers Authority (now the Environment Agency) for Wath Ings until 1994 when they agreed to relinquish the agreement to incorporate Wath Ings within the Old Moor site.

The Council's Countryside Unit became involved in the Dearne Valley from 1987, working with the YWT at Broomhill Flash and Wath Ings. We had a modest budget that we managed to match with Countryside Commission Grants. The benefit of having a number of different sites in the locality capable of supporting each other was clear from the outset. Our activity in the early stages at **Wath Ings** was somewhat limited by the difficult access arrangements. However, by working with the reserve Management Committee we supported the site by providing a new hide, a new bridge crossing Knoll Beck and stock fencing to control grazing animals.

Broomhill Flash was the main area of activity for us in this period. In August 1992 a new hide and schools' facility was installed, working with the YWT Education Officer, Mildred Scott. The Visitor Centre was sited next to the hide with windows giving close views of the birds for numerous visiting groups of Primary school children.

These facilities survived for many years, but I understand both the hide and the classroom were burnt down and the hide was replaced with a breeze-block structure, built by the local volunteers, in 2003. Ultimately the site was saved by its purchase by the Garganey Trust in 2002 and additional land was acquired in 2004 to create Clegg's Meadow. A new double-decker hide was installed in 2015/16.

Wombwell Ings was an exceptional site owned by the Environment Agency and banked to create flood storage capacity. It was essentially grazing marsh with a subsidence flash, adjacent to Broomhill Flash and bounded on two sides by the Rivers Dove and Dearne and Bulling Dike. Overgrazing by unregulated horses from an adjacent caravan site was a problem, as was disturbance from the horses' owners walking the land.

A management arrangement was agreed with the Environment Agency to improve the habitat for birds on the site. Efforts to control the horse grazing offered hope that some measure of control of overgrazing disturbance could be achieved. One positive here was that we were able to install a hide overlooking the flash.

Gypsy Marsh was quite unlike anything else in the vicinity, with the drier patches dominated by stands of heather and wetter areas with rushes and sedges. A hard footpath ran through the middle. It was presumed to be a remnant of lowland heath and worthy of protection as a nature reserve. Part of the site was to be acquired by the Council for the Dearne Valley Parkway scheme, but it became possible to acquire the whole site in 1993.

Park Hill Brickworks was acquired as 'planning gain' in relation to proposals for housing development on a former scrapyard and in particular those parts of the site which could not be protected from flood events. Much of the site was boggy with a fairly large lake at one end, where the old brick kiln structure and associated tall chimney stood.

The kilns were partially demolished but seven of the original 10 chambers were largely intact and the chimney, approximately 112 feet high, was in fairly good condition. An initial survey in September 1992 recorded nine Daubenton's bats roosting in crevices within the chambers. Further surveys in March 1993 concluded that the building had been used extensively by bats over many years and probably for breeding. Over the following months the structure of the kilns was stabilized, and the openings were grilled.

Doveside was similar to Park Hill. This site was acquired in relation to proposals for housing development on land adjacent to the River Dove, opposite Wombwell Ings. Flooding was again an issue here and the developer could only build on part of the site above the flood risk level. The remainder alongside the river was dedicated to the Council for public use, as a nature reserve.

Dearne Valley Regeneration

In the 1950s the coal industry dominated the area but by 1990 the area from Old Moor eastward into Rotherham saw collieries closing and power stations, railways, marshalling yards, coking plants, and pit heaps becoming derelict. In mining alone 11,000 jobs were lost. Covering 600 hectares it was considered the largest derelict site in Western Europe.

As the dereliction spread into Rotherham and Doncaster, the Leader of Barnsley Council, Hedley Salt, led the setting up of the Dearne Valley Partnership to oversee and coordinate the regeneration of the whole area by the three councils. Much of the ground was heavily polluted and needed to be restored by covering it with clean soil deep enough for trees and grassland to become established. To achieve this, some 700,000 tonnes of soil material were needed.

The vision initially floated by Roger Mitchell (Rotherham MBC & Yorkshire Wildlife Trust) was to source this extraordinary amount of soil material from Old Moor. This had a double advantage. Firstly, it provided a guaranteed supply of material when it was needed and from where it could easily be excavated and transported to Wath Manvers using off-road vehicles. Secondly the excavation would create the new wetland site at Old Moor, which when linked to other existing important wildlife areas such as Wath Ings and Broomhill Flash (both then managed by the YWT) would create a significant and valuable suite of nature conservation sites. It would act as a symbolic greening of the Dearne Valley. Accessibility was to be increased by building the Dearne Towns Link Road (now Dearne Valley Parkway A6195) to connect with the M1 and the A1.

It was realised that to achieve the vision for Old Moor and the regeneration of the whole Dearne Valley needed investment beyond the scope of local Councils. Specific support was required from Central Government and the European Union (EU).

With the demise of the coal industry in the 1980s, former mining areas throughout the whole of Britain were suffering major deprivation. In response, a key initiative was taken by Hedley Salt, to set up the Coal Communities Campaign (CCC). This brought together all the existing and former mining area Local Authorities in the UK to lobby Government for additional resources to tackle coalfield deprivation.

The CCC then went on to lobby the European Union, together with other deprived former

coalfield areas throughout Europe, to direct funding programmes to assist former mining areas in the EU. This resulted in the RECHAR (Reconversion de Bassins Charbonniers) programme, which resulted in massive investment in the Dearne valley. This included funding from the European Regional Development Fund which was particularly important for many economic and environmental projects in Barnsley, including Old Moor.

The results of this activity will be described in future articles dealing with land and funding issues, surveys and partnerships.

A survey of Bush-crickets in the Hull area

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In recent decades, there has been an unprecedented increase in the rate of natural colonisation and northwards range expansions of many animal and plant species in temperate regions (Hickling *et al.*, 2006; Sutton *et al.*, 2017). The main driver behind this upheaval in the distribution of many species is climate warming (Parmesan and Yohe, 2003). Orthopterans, the insect group including crickets and grasshoppers, has been no exception, and significant northward expansions have taken place in this group in the UK (Hickling *et al.*, 2006). Indeed, Yorkshire appears to be the new frontier for several Bush-cricket species (Limbert, 1998). The recent range expansions of several species (e.g. Long-winged Conehead, *Conocephalus fuscus* and Roesel's Bush-cricket *Roeseliana roeselii*) (Sutton *et al.*, 2017) have occurred in the context of historical losses of other species (Grey Bush-cricket *Platycleis albopunctata*, Bog Bush-cricket, *Metrioptera brachyptera*, Wartbiter, *Decticus verrucivorus*, possibly associated with dramatic habitat changes in the last century (e.g. agricultural intensification, such as conversion of grassland to arable, removal of hedgerows, drainage of bogs or increased pesticide use) (Benton, 2012). In Yorkshire, historical records of several species, such as Speckled Bush-cricket and Dark Bush-cricket, attest to the prior occurrence of species which disappeared until recent recolonisation (Haes and Harding, 1997; Limbert, 1998). Even with the factor of a warming climate, species colonisation cannot happen in the absence of suitable habitat. There is some evidence that land management regimes in recent decades, such as reduced cutting of road verges, set-aside schemes, hedgerow restoration and field margins included in agri-environmental schemes such as Countryside Stewardship, may have facilitated recolonisation of some species (Gardiner, 2009) by provisioning new habitats and creating dispersal corridors.

The range expansions of Bush-crickets are puzzling given that they involve species with a wide range of dispersal abilities. The long-winged species, or species with long-winged forms, are expected to disperse quickly into new habitats, but short-winged or apterous forms pose a challenge for rapid long-distance dispersal. Factors involved could be passive egg dispersal in floating vegetation or wood (rafting) (Decleer, 1990) or human-aided dispersal (e.g. via adults or nymphs hitch-hiking on vehicles, as part of green-hay transfer schemes (Wagner, 2004) or with agricultural or horticultural products. Finally, air travel or container cargo ships (presumably carrying horticultural products) are the only way that five native European bush-cricket species could have been introduced and then colonised areas of the USA and Canada in recent decades. These are the Oak Bush-cricket introduced in the NE and NW of the US and

Canada prior to 1957 (Klymko *et al.*, 2019; Shapiro, 1995), Southern Oak Bush-cricket, since 2017 in Washington and Oregon states in the USA and Vancouver Island in Canada (iNaturalist records), Roesel's Bush-cricket, introduced prior to 1952 and now widespread on the central and NE USA (McAlpine, 2009), Speckled Bush-cricket in NY state, Massachusetts and Toronto, Canada (iNaturalist records), and Short-winged Conehead, introduced in Vancouver, Canada, and Oregon, USA, iNaturalist records). Several of these species may have been introduced with imported ornamental plants.

Bush-crickets are a challenging, often overlooked and under-recorded group, which hampers the understanding of their range expansions. Using bat detectors, even for species where stridulation is within the human hearing range like the Grey Bush-cricket, makes recording much more efficient compared with hearing or seeing them, and has expanded the known range of the species (Gardiner *et al.*, 2010). More recently, data collected with automatic sound recorders deployed as part of a citizen science bat survey across Norfolk was fed onto semi-automatic identification algorithms that identified calling Bush-crickets, with high accuracy for three of the species and characterised their daily calling patterns and distribution (Newson *et al.*, 2017).

The Hull area

The city of Hull has a wealth of sites with suitable Bush-cricket habitats. These include brownfield sites, amenity grassland, gardens, woodland and saltmarsh by the Humber Estuary. Green corridors criss-cross the city in the shape of train lines (existing, disused or converted into cycle/pedestrian paths), the river Hull, and a network of drains and ditches (the main ones being the Beverley and Barmston drain and Holderness drain).

An awareness of the existence of several species in local sites prompted me to review the existing records, contact local naturalists requesting any non-submitted records, and do some Bush-cricket recording myself. My aim with this article, and the companion article in the Hull Natural History Bulletin (Gómez, 2022) is to increase knowledge on the current status of Bush-cricket species in the city of Hull and surrounding area, and provide a baseline to understand future changes, encourage recording in the group, and identify sites where Bush-cricket conservation could focus at the local scale.

Methodology

For the purposes of this article, 'the Hull area' encompasses the four OS grid square hectads where the city of Hull is located (TA02, TA03, TA12 and TA13) north of the Humber Estuary. This, roughly, includes from the Humber Bridge Country Park in the west to Paull Holme Strays in the east, and from the Humber Estuary to the villages of Skidby, Cottingham, the south half of Beverley including Westwood, and the areas of Wawne, Bilton and Hedon.

I visited known sites with suitable habitat in 30 km² in the recording area during summer 2022, all of them publicly accessible and walkable from home. Since early September 2022, I used a Magenta Bat4 bat detector during surveys (Magenta Electronics LTD), adjusting it to the peak stridulation frequency for the species (between 20 and 40 kHz). Although an estimate of individuals seen/heard was inputted for each record, I made no attempt to estimate the number of individuals present per site.

All records obtained by either myself or submitted to me by several local naturalists with an interest in Bush-crickets were added to the iRecord database with permission. Finally, I interrogated the iRecord database, implementing a saved filter including a taxon filter (insect: orthopteran) and a freehand boundary (a polygon), encompassing the area described above. Then I used a manual search for each of the Bush-cricket species to compile the number of records and view maps. Similar searches in the NBN Atlas and the YNU orthoptera database uncovered a few additional older records. To allow for records submitted late, I carried out the final searches in January 2023.

Results

A total of 249 records of eight Bush-cricket species were obtained overall in the Hull area, 161 of them added for 2022 (140 by the author), contrasting with the 88 available records from before 2022 (Table 1, p20). Two of the species had single records, one, a historical, imprecise record 'near Beverley' in 1905, the other represents a rare immigrant record. The remaining six species can be regarded as well established in the area. I describe the results for each species in the following sections.

Sickle-bearing Bush-cricket *Phaneroptera falcata*

This species used to be a rare immigrant mainly to Southern coastal areas, but now has a toehold in the UK as a breeding species, with several populations established in East Sussex and Kent since 2006 (Collins *et al.*, 2007). Natural colonisation of the UK by this species had been predicted as early as 1920: 'Nine species only are known with certainty to be natives of Britain, though *Phaneroptera falcata* Scop, may quite likely turn out to be so.' (Lucas, 1920) Colonisation was deemed imminent given the recent increase in range in northern France and the Low Counties (Collins *et al.*, 2007; Sutton *et al.*, 2017).

Records. A single record from the Makro brownfield site (TA064265) (land westwards from the Makro store on St Andrews Quay formerly known as Cod Farm), was a male found on 16 August 2010 by Barry Warrington. A personal account of the find with photographs can be found in Warrington (2010).

Sites. The only site where it has been recorded is the above Makro site, well known for its biodiversity.

Oak Bush-cricket *Meconema thalassinum*

This species has a long history in Yorkshire, but it is quite localised (Limbert, 2004). It is the oldest established species in the recording area. It appears that it is expanding in range, but it is hard to tell given that it is likely to be under-recorded.

Records. 11 records in the recording area, all but one from before 2022. The first records are from Burton Constable in July 1996, where they were swept from roadside elms and oaks by William Dolling. Burton Constable yielded further records in later years, indicating a well established population. Within the city limits, an individual entered through a window on Heathcote Street on 7 August 2014 and another individual appeared to have hitched a ride on a car windshield from Bedfordshire all the way to Hull, but the record wasn't submitted (Rob Jaques, pers. comm.).

Sites. Records are quite scattered in 6 km², and come from the Hessle area, from West Park, a care-home by Jack Kaye fields and from Burton Constable (see distribution map p 21).

Southern Oak Bush-cricket *Meconema meridionale*

This species has expanded in range across Europe from Italy since 1960. It reached The Netherlands, Belgium and Northern France in the 1990s, so its arrival in the UK was expected. Its abilities to use transport networks as a means of dispersal, first noted in Northern France (Sutton *et al.*, 2017), was further suggested when the first was recorded in the UK in a garden near Thames Ditton railway station in 2001. There are several UK records in 2001, some of them of nymphs, indicating prior breeding at several sites. After its introduction in the UK range expansion continued apace. A decade later, it had reached Yorkshire, the first record in Hull. It appears not to have expanded much in later years, with Hull and Leeds being its current Northern limits.



Fig.1. A female Southern Oak Bush-cricket just dislodged from Oak at Western Cemetery
Photo A. Gomez

Records. A total of 32 records, 17 of them before 2022. The first record is on 10th October 2011 by Faith Barlow in the Cottingham Road/Chanterlands area. In 2014 several records came from St. Nicholas Primary school by Cottingham Road, which appeared to hold an established colony, with several records in subsequent years. In 2015 and 2022 records came from the General and Western Cemetery. Several records are from the Avenues area and Hessle. Two records came from misidentified Oak Bush-crickets, including the last record in 2022, on 16 November, from iRecord. (See map p21)

Sites. The General and Western Cemetery and tree-lined Avenues area appear to hold a resident population. So far records have come from the western side of the city across 8 km², although any place with large trees is a suitable site and the species is expected to expand further.

Dark Bush-cricket *Pholidoptera griseoptera*

A common species in the southern half of the UK. Scattered old records of this species in Yorkshire suggest it might have been more widespread in the past. A relict coastal population in North Yorkshire between Hayburn Wyke and Robin Hood's Bay has been known for at least a century (Haes and Harding, 1997), in thick scrub in south-east facing slopes down to the tide-line (Dolling, 2007).

Records. There is a single old record by Geo. B. Walsh from July 1905 ‘near Beverley’, which at the time was the most northerly record known (Walsh, 1923) and remains the only known record of the species in VC61.

Sites. There is no information on the specific site, in fact, the record was communicated almost two decades after the event, as a note in the 1923 volume of *The Naturalist*. ‘I make the very belated record of the curious Orthopteron (*Pholidoptera griseo-aptera* De Geer = *Thamnotrizon cinereus*), taken by sweeping wayside vegetation near Beverley, in July, 1905. The species is not recorded in the Victoria County History, and is apparently rare in Yorkshire, for this single specimen is the only example I have ever met with in the county, although I have swept the species not uncommonly in Quy Fen, near Cambridge, and in sandy districts near Mildenhall, in Suffolk’.

Roesel’s Bush-cricket *Roeseliana roeselii*



Fig.2. Female Roesel’s Bush cricket basking on a garden fence. Photo: A.Gomez

The first VC61 records of this species are from Kilnsea and Skeffling in September 1934 (Limbert, 2000). This, presumably relict, population was the species northernmost outpost at least until the 1988 Atlas (Marshall and Haes, 1990). However, the species has been rapidly spreading north and west in recent decades across Europe and the UK (Sutton *et al.*, 2017) and there are currently a number of populations across all Yorkshire vice-counties.

Records. A total of 48 records were obtained from the Hull area, 19 from before 2022. The first record is from 2015, at the Bridgehead Business Park, Hessle, by Barry Warrington. Several records are of the long-winged, dispersing form (*f. diluta*), including early records by Hessle foreshore (27 August 2015), and Jenny Brough Lane (30 July 2015) (B. Warrington pers. comm). Remarkably, two individuals of the *diluta* form were recorded on the same day of July 2020, one at Pickering Park, on active dispersal, witnessed landing and taking off on strong flight, and the other at the University of Hull. A *diluta* form was also found at the KC Stadium railway triangle in July 2022 (Warrington pers. comm.). Adults have been found from the end of June to early November, indeed the last record was on 1 November. The number of records and sites of

this species increased markedly in the very hot summer of 2022. (See map p21).

Sites. Widespread across the recording area, both in field margins and lanes at the outskirts of the city, and in inner city brownfield and grassland sites in 29 km². Sites include: Skidby and Middledyke in Cottingham; in Hull: KC Stadium Railway Triangle, Noddle Hill LNR, Jack Kaye Fields, Rockford Fields LNR, Garrowby Orchard, East Carr Road, Makro site, and a field by Reich Carter Way. In Hessle: Hessle Foreshore, Ferriby Road, Henry Boot Way and Green Lane, by Old Fleet Drain. Paull Holme Strays has a record of a nymph, suggesting a breeding population.

Long-winged Conehead *Conocephalus fuscus*



Fig.3. Basking Long-winged Conehead at Stable Walk. *Photo: A.Gomez*

First recorded in the mainland of the UK in 1945 in Sussex. A species spreading north across Europe and the UK since the 70s and 80s (Kleukers *et al.*, 1996), with a relatively recent but expected arrival in Yorkshire, with the first record in 2012 in the Thorne Moors/Hatfield area, where it was found by Barry Warrington. It is still actively spreading and has become the most common orthopteran in Hull.

Records. 90 records, only 12 are from before 2022. The first record in the Hull area came from Hessle's Jenny Brough Lane in 2017 by Barry Warrington. Adults were found from July to early November. The number of records and sites increased markedly in the very hot summer of 2022. (See map p21)

Sites. Records from 33 km². Widespread, with sites in Hull including KC Stadium Railway triangle, Jack Kaye Field, Amazing Community Garden, Sculcoates Cemetery, Walton Street, Rockford Fields LNR, King George V Dock, Makro site, along the River Hull north of Clough Road, and the field between Reich Carter Way and Beverley Road. In Cottingham: Priory Fields, Thwaite Gardens, Snuff Mill Lane. In Hessle: Boothferry Rd, Jenny Brough Lane and the saltmarsh between Hessle Haven and Makro Site. That it is under-recorded is evidenced by the fact that it was found in all sites that were visited that included suitable habitat. (See map p21)

Short-winged Conehead *Conocephalus dorsalis*

The Short-winged Conehead has a long Yorkshire history, known since 1837 from Thorne Moors and since 1947 from the Kilnsea area (Hincks, 1948). Indeed, the Kilnsea population

was the northernmost outpost for the species until 1997 (Haes and Harding, 1997). It has been expanding in range in the UK in recent decades, although at a rather slower pace than the Long-winged Conehead, and appears to be spreading along the Humber. The eggs of this species can survive after submersion in sea water up to three months (Warne and Hartley, 1975), which may aid long distance dispersal in rafting vegetation along coastlines and rivers.

Records. 18 records in the Hull area, 11 of them from before 2022, the first on the Humber embankment in 2004 at Paull Holme by William R. Dolling. Some of the records are the long-winged form *burri* (e.g. Hessle foreshore, 27 August 2015, Warrington pers. comm.). Adults are rarely seen beyond mid October, the last record in the area was on the 22 September. (See map p21)

Sites. Recorded in 12 km², most come from areas near the Humber, including the Paull Holme area, several sites at Hessle and the Humber foreshore between Hessle and St Andrews Quay, Myton Bridge (2022) and KC Stadium railway triangle (2022). The only record away from the Humber is by Noddle Hill LNR. The habitat on the Holderness drain banks could serve as an inland dispersal corridor as there are inland records outside the recording area at Tickton.

Speckled Bush-cricket *Leptophyes punctatissima*



Fig. 4. Speckled bush cricket male stridulating near Sculcoates Lane

A widespread and locally common species south of the Humber, which is expanding northwards in range. In his 2004 checklist of Yorkshire Orthoptera, Limbert (2004) considered that the species was 'very rare and probably extinct resident and an apparent casual introduction'. The first Yorkshire record, in VC61, was an individual near Middleton in the Wolds in 1924 by B. Walsh. There is some recent evidence of range expansion in East Yorkshire, with populations established at North Cave Wetlands since at least 2002, in Beverley just outside the recording area since July 2011, and with a single record from Hempholme, by the river Hull north of Tophill Low in 2020.

Records. A total of 48 records in the Hull area, 17 of them before 2022, and the first on 6 July 2010 by Barry Warrington from the Makro site. Records from mid May to late October, with adults from July. (See map p21)

Sites. Quite localised with disjunct populations in 8 km². A large population at the SW corner of the recording area, which includes the Makro brownfield site, where many adults were found in 2015. A number of males calling were recorded in September 2022. It is also found along a hedgerow at the Humber foreshore by the Trans Pennine Trail, at brownfield sites by Henry Boot Way, with many adults present, and on hedges and bushes by the Humber wall at St Andrews Quay and at the south end of Pickering Park. Three further populations were found during the 2022 surveys at the Sculcoates Cemetery, Needler's Way by the railway line, and in gardens at the eastern end of Ella Street. Efforts to locate them in the intervening areas along the Barnsley and Hull railway line failed despite apparently suitable habitat.

Conservation

Several UK councils have included Bush-cricket in their Biodiversity action plans. For example, the city of Wakefield included three bush-cricket species in its Biodiversity Action plan (website: <https://www.wakefield.gov.uk/Documents/sports-leisure/parks-countryside/biodiversity-action-plan.pdf>): The Southern Oak Bush-cricket and Speckled Bush-cricket as priority species, with the Short-Winged Conehead regarded as a Key Priority Species. In addition, Stevenage city council suggested regular managing of a grassland site holding a population of Great Green Bush-cricket, pushing back encroaching scrub to form uneven fringes around meadows, create bare patches of ground in order to create warm spots for basking insects and establish a monitoring regime for the species (<https://www.stevenage.gov.uk/documents/leisure-and-culture/biodiversity-action-plan-2017-2022.pdf>).

None of the six resident Bush-cricket at Hull are of conservation concern, despite their diverse habitat requirements. Both *Meconema* species are predatory and nocturnal and live permanently on tree and bush canopies. Their future seems guaranteed given the trees they live on and their widespread nature around Hull, barring heavy synchronous pollarding of mature trees and bush removal. The Speckled Bush-cricket is eclectic, and can live in gardens, scrub and hedgerows, although its distribution might be limited by dispersal. We expect them to increase their range slowly in neighbouring areas and make use of dispersal corridors such as railway lines. Other species rely on ungrazed grassland including long tussocky grass. Sensitive management of grassland and south-facing scrubby margins is likely to favour the grassland-loving species, Long-winged Conehead and Roesel's Bush cricket, but also create green corridors for Speckled Bush-cricket and favour other thermophilic insects.

Playing fields could be made more biodiversity friendly by creating less managed field edges (Gardiner, 2010). A reduced or rotational mowing regime for grassy floodbanks (e.g. along the river Hull, drains and along the Humber) would not only favour bush-cricket, but also other invertebrates, and biodiversity as a whole (Gardiner *et al.*, 2015). Finally, we suggest that the Short-winged Conehead, associated to damp grassland and marshland, could become a flagship species for saltmarsh conservation at the Humber foreshore in the city of Hull.

Conclusions

In his review of the genus *Metrioptera* in Yorkshire, Martin Limbert (Limbert, 1998) stated: 'A detailed knowledge of Bush-cricket sites is also essential for their conservation. Populations are more likely to be lost or reduced through ignorance than through collecting or disturbance. Further, any Yorkshire locality with a resident Bush-cricket is potentially a site of intrinsic importance, as the insects are often indicators of high quality habitat, especially so far north.'

All records of Bush-cricket in Yorkshire are notable'. In little more than two decades, the Bush-cricket fauna of Hull has grown to six breeding species, most of them widespread across the city and surrounding area, and range expansion and gap-filling of populations is ongoing. Given the number of new sites found during the surveys undertaken for this project, it is apparent that several of the species have colonised much of the recording area unnoticed. These species have increased in range in the last few decades in the UK (Sutton *et al.*, 2017). With the soundscape of Bush-cricket song falling out of the hearing range of many naturalists, together with their cryptic colours and timid habits, it is a group that is severely under-recorded. However, using a bat detector makes surveying much more efficient during the adult season. More systematic surveys across Hull would help fill gaps, identify sites and allow us to follow the spread of these Bush-cricket species. I hope this article contributes to raise awareness and increase recording for this fascinating group of Orthoptera and sensitive conservation of their habitats.

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My warmest thanks to Barry Warrington, for sending numerous personal Bush-cricket records, field-craft tips and site information and sharing photographs. Bill Dolling, fellow member of the Hull Natural History Society, kindly dug into his notebooks for old records across East Yorkshire and made them available to me for submission. Jen Woollin from Hull City Council shared another treasure trove of records from around Hull. Andrew Gibson, from the Yorkshire Wildlife Trust, shared his ground knowledge and provided records for new sites. Finally, thank you to Helen Bovil, Paul Martin, James Mark Pearson, Mike Winter and Simon Brebner for sending records and photographs. Robert Jaques described in correspondence some anecdotal evidence regarding vehicle assisted dispersal of an Oak Bush-cricket. Robin Sanders and Clare Langrick from NEYEDC dug into the database for records, and Phillip Whelpdale, the YNU Orthoptera recorder, kindly shared the YNU Orthoptera database with me, which included several valuable unpublished records.

Table 1. Bush-cricket species recorded in the Hull area with 1st record year, total records to December 2022 and key sites.

Species	1st date	Total records	Records before 2022	km ²	Key sites
Sickle-bearing Bush-cricket	2010	1	1	1	Makro site
Oak Bush-cricket	1996	12	11	6	Burton Constable, West Park
Southern Oak Bush-cricket	2011	32	17	8	General and Western Cemetery
Dark Bush-cricket	1905	1	1	1	'near Beverley'
Roesel's Bush-cricket	2015	48	19	29	Rockford Fields LNR, Jack Kaye Field
Long-winged Conehead	2017	90	12	33	Rockford Fields LNR, Jack Kaye Field
Short-winged Conehead	2004	18	11	12	Myton Bridge, Hessle foreshore, Paull Holme strays
Speckled Bush-cricket	2010	48	17	8	Makro Site, Henry Boot Way, Sculcoates N Cemetery



Oak Bush-cricket



Southern Oak Bush-cricket



Roesel's Bush-cricket



Long-winged Conehead



Short-winged Conehead



Speckled Bush-cricket

Distribution maps of the six established Bush-cricket species in the Hull area. Circles indicate OS 1 km² grid squares where the species has been recorded. For Speckled Bush-cricket, to show the fine scale and discontinuous distribution roughly following train lines, the small blue squares are OS 100 m² squares where the species has been recorded, with the large blue square indicating an OS 1 km² grid square. The maps were generated using iRecord as described in the Methodology section.

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The long view of the flora of Potteric Carr

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Potteric Carr nature reserve is a Yorkshire Wildlife Trust reserve on the southern edge of Doncaster. Having started in 1986 as a 12ha marsh (Low Ellers marsh), it has now increased in extent considerably. The main nature reserve is around 220ha, but adjacent land at Carr Lodge and Manor Farm adds another 35ha and 12ha respectively, with further extensions on the cards in the near future. However, the name Potteric Carr is an old one and refers to a much wider area than the fairly easily defined nature reserve now (the M18 and railways forming a set boundary). This makes finding historic records that are confirmed to be from the current nature reserve and not a wider area much more difficult. So within this article historic records are generally for the wider area (although usually from the nature reserve) and recent ones for the small area of Potteric Carr nature reserve only.

Although often considered a site for birds, Potteric Carr is also notable for dragonflies, other invertebrates and flora. However, the flora is often difficult for a casual visitor to see, as many things cannot be seen from the footpaths, and some areas surrounded on all sides by railway lines are even inaccessible to staff due to rules on crossing railways.

Geoff Carreck, along with his wife Jo, have been recording the flora and collating the records of others for several years at Potteric Carr, and have been regular visitors, volunteers and members of Yorkshire Wildlife Trust for decades. Geoff sadly passed away in 2022. Their work allows me to give a definite figure of 705 plant species that have been recorded since the reserve was started (Carreck and Carreck, 2022). Some are now locally extinct or appeared only for a year or two, some have a long pedigree on site, but each is included with equal weight in this number. Geoff and Jo recorded around 400 species per year in recent years, although often different

species each year! The true number of species currently present is probably considerably more than 400, but less than 700. Coming up with a list of currently extant species is difficult, as some of the harder to reach locations are only accessible in drought years (like 2022) and may only be recorded at intervals of 10 years or more. For example, Marsh Stitchwort *Stellaria palustris*, was refound recently nearly 40 years after the last record!

Table 1 – Selected species from the habitats of Potteric Carr with century of last record (using records from Carreck and Carreck, 2022, Sheffield Public Museum, 1889, Skidmore *et al*, 1981, Wilmore, Lunn and Rodwell, 2011, and Yorkshire Wildlife Trust, 2022). This part of the table should be compared with section 2 on the facing page.

	18th century		19th century	
Reedbed	Marsh pea	<i>Lathyrus palustris</i>	Milk-parsley	<i>Peucedanum palustre</i>
Fen	Marsh Lousewort	<i>Pedicularis palustris</i>	Royal Fern	<i>Osmunda regalis</i>
	Hemlock Water Dropwort	<i>Oenanthe crocata</i>	Marsh fern	<i>Thelypteris palustri</i>
			Flowering Rush	<i>Butomus umbellatus</i>
			Great Fen Sedge	<i>Cladium mariscus</i>
			Dioecious Sedge	<i>Carex dioica</i>
			Bog Myrtle	<i>Myrica gale</i>
Wet woodland				
Open water (inc ponds)			Bogbean	<i>Menyanthes trifoliata</i>
			White Water Lily	<i>Nymphaea alba</i>
			Least Bur-reed	<i>Sparganium natans</i>
Wet grassland	Marsh Fleawort	<i>Tephrosieris palustris</i>	Marsh Cinquefoil	<i>Potentilla palustris</i>
Drier grass-land				
Bog	Cranberry	<i>Oxycoccus palustris</i>	Marsh Gentian	<i>Gentiana pneumonanthe</i>
	Bog Asphodel	<i>Narthecium ossifragum</i>	Bog Rosemary	<i>Andromeda polifolia</i>
	Oblong-leaved Sundew	<i>Drosera intermedia</i>	Round-leaved Sundew	<i>Drosera rotundiflora</i>
			Great Sundew	<i>Drosera longifolia</i>

Table1 continued:

	20th century		Still present	
Reedbed			Water dock	<i>Rumex hydrolapathum</i>
			Lesser Bulrush	<i>Typha angustifolia</i>
			Bittersweet	<i>Solanum dulcamara</i>
			Purple Loosestrife	<i>Lythrum salicaria</i>
Fen	Tufted sedge	<i>Carex elata</i>	Marsh Stitchwort	<i>Stellaria palustris</i>
	Tall Mint	<i>Mentha x smithiana</i>	Greater Tussock Sedge	<i>Carex paniculata</i>
	Marsh Arrowgrass	<i>Viola palustris</i>	Parsley Water Dropwort	<i>Oenanthe lachenalia</i>
			Marsh Pennywort	<i>Hydrocotyle vulgaris</i>
			Common Meadow-rue	<i>Thalictrum flavum</i>
			Skullcap	<i>Scutellaria galericulata</i>
Wet wood-land	Marsh violet	<i>Viola palustris</i>	Enchanters Nightshade	<i>Circaea lutetiana</i>
			Downy Birch	<i>Betula pubescens</i>
			Water Chickweed	<i>Myosoton aquaticum</i>
			Alder	<i>Alnus glutinosa</i>
Open water (inc ponds)	Fat Duckweed	<i>Lemna gibba</i>	Water Violet	<i>Hottonia palustris</i>
	Frogbit	<i>Hydrocharis morsus-ranae</i>	Fen Pondweed	<i>Potamogeton coloratus</i>
	Floating Club-rush	<i>Eleogiton fluitans</i>	Greater Spearwort	<i>Ranunculous lingua</i>
			Fennel Pondweed	<i>Potamogeton pectinatus</i>
Wet grass-land	Corky-fruited Water Dropwort	<i>Oenanthe pimpinelloides</i>	Great Burnet	<i>Sanguisorba officinialis</i>
	Pepper Saxifrage	<i>Silaum silaus</i>	Lesser Spearwort	<i>Ranunculous flammula</i>
	Brown Sedge	<i>Carex disticha</i>	Meadowsweet	<i>Filipendula ulmaria</i>
	Orange Foxtail	<i>Alopecurus aequalis</i>	Purple Small-reed	<i>Calamagrostis canescens</i>
Drier grass-land	Greater Knapweed	<i>Centaurea scabiosa</i>	Common Knapweed	<i>Centaurea nigra</i>
	Hawkweed Ox-tongue	<i>Picris hieracoides</i>	Yellow Rattle	<i>Rhinanthus minor</i>
			Red Clover	<i>Trifolium pratense</i>
			Lesser Stitchwort	<i>Stellaria graminea</i>
Bog				

Added to this the work of the South Yorkshire Plant Atlas (Wilmore *et al.*, 2011) and the biography of Thomas Tofield (Skidmore *et al.*, 1981) gives us a good understanding of the flora of the past. In particular the records of Thomas Tofield from the 1780s are from the exact area of Potteric Carr nature reserve and slightly downstream, recorded whilst he was overseeing the drainage of the area. This gives us a valuable record of the species (and therefore probably communities) that would have been present in the landscape before the agricultural improvement and construction of railways that followed. However the lack of records of many grasses, rushes and sedges from Tofield leave us to guess at this element of the flora of the past.

Flora species of Potteric Carr

There is a wide range of habitats at Potteric Carr (reedbed, fen, wet woodland, ponds, lakes, drains, wet grassland, drier neutral grassland), and from historic records it seems that bog was present but has been lost from the area. We can look at the species still present and the species lost, and see a rough timeline. There are more extinct species than given in Table 1 pp24-25).

The number of species found on site has been swelled by accidental introductions and invasive non-native species, but the majority of species recorded are native and examples of species you'd expect from the semi-natural habitats found on site. Prime examples of introductions are the invasives Water Fern *Azolla filiculoides* and Australian Swamp Stonecrop *Crassula helmsii*, and the long established and less invasive Greater Celandine *Chelidonium majus*, and Narrow-leaved Ragwort *Senecio inaequidens*. But there have been many losses too, sometimes of species that have been lost from large parts of the country making them the rare species of the 21st century.

The losses from the site are largely due to loss of habitats, or succession of habitats and inability of species to move to other parts of the site that may be suitable. For example, there is ample supply of habitat for species like Tufted Sedge *Carex elata*, but it was lost in the 1970s. It was last recorded in a drain so is most likely lost due to shading from succession to woodland along many of the drains, but it didn't find its way to nearby suitable open habitat. Despite its loss it would be a prime candidate for reintroduction as there is sufficient suitable habitat elsewhere. The development of some arable fields in the early 2000s into what is now Huxterwell Marsh has lost the habitat of Prickly Poppy *Papaver argemone* and other arable weeds. And occasionally areas have been seeded (for example land around the Overflow carpark after adjacent development), so species have occurred after seeding for a year or two and then disappeared again (like Sainfoin, *Onobrychis viciifolia*).

Looking at the table of species (Table 1) perhaps a few themes stick out, one being the loss of the acid and/or bog species in the 18th and 19th century, the continued loss of fen species, and the loss of species from other habitats more recently.

Loss of bog species

It is likely that in the past the area of fen was extensive, and being in a lowland setting and near to the Magnesian Limestone, ground water and surface water was, and still is, base rich. However, given the presence of species like Round-leaved Sundew *Drosera rotundifolia*, Great Sundew *D. longifolia*, Bog Rosemary *Andromeda polifolia*, Cranberry *Oxycoccus palustris*, Bog Asphodel *Narthecium ossifragum*, and Marsh Gentian *Gentiana pneumonanthe*, in the 1780s it seems highly likely that sections of fen had developed into raised mire communities (mounds

of bog mosses raising the surface above most of the enrichment from other sources). This habitat is entirely missing from this section of the Torne valley now (species are still present on Hatfield Moor just downstream). Given the drainage of the valley and inundation with chemically enriched water (NPK fertiliser from arable land in the 20th and 21st centuries, for example) it seems impossible that these species might have survived undetected or to be able to recreate this habitat in the same location or at least within a human life span. It may be possible at some point in the future.

Loss of fen species

The fen habitat of Potteric Carr is still present, despite drainage, construction of numerous railway embankments and encroachment of carr woodland. However, the fen was much more extensive and species rich in the past. Species did not only disappear after initial drainage in 1780, or after further drainage in 1980, but fairly consistently through the period from the 18th century onwards. Without regular records it is hard to pinpoint the exact date of extinction of many species. Habitat succession, partly due to construction of railways and making areas more difficult to farm, seems a likely candidate as a reason for loss, as does enrichment from 20th century farming methods, an upstream sewage treatment works, pollution from expansion of local industry and atmospheric pollution (particularly from the adjacent M18).

However, given the slightly broader tolerance of some of the lost fen species, rather than the bog species, it may be possible to rediscover, or reintroduce some of them to well selected locations that are less likely to suffer these issues.

Species still present are now sometimes restricted to small patches cut off from other similar communities. This may be by roads and railways, or development of carr woodland surrounding the remnant fen patches. Blunt-Flowered Rush *Juncus subnodulosus* is found in several locations, but cannot colonise new areas without assistance. Marsh Stitchwort is confined to the edge of a single lake, as is Parsley Water-dropwort *Oenanthe lachenalia* (although this is in considerable numbers in most years). Therefore, some species present are not necessarily safe from future extinction, and perhaps warrant action to actively conserve them (translocation of seed or propagules).

Losses from other habitats

Drainage was clearly a driver of bog and fen species in the 18th and 19th century, but species from most habitats were lost in the 20th century. As mentioned above, the site suffered from lack of management and pollution from multiple sources. In addition to this, an uncontrolled fire getting into the peat from management in the 1980s in an area of acid grassland, reduction of the rabbit population through myxomatosis, which maintained some areas of grassland and management of some habitats to create more bird-focused/less botanically rich habitats all led to loss of some species.

The rise of reedbeds

Hidden in the data presented is the meteoric rise of reedbed in the area. Knowing the habits of Common Reed *Phragmites australis*, it has almost certainly been present since the 18th century in reasonable amounts. In times of little management or grazing by wild or domesticated animals it would have been more dominant, and it would have receded as management/grazing pressure increased. However, with the mining subsidence of the mid-20th century and

the habitat creation (digging of lakes) of the late 20th and early 21st centuries it seems that near mono-species reedbeds have become much more widespread. The shallow permanent water it most likes is much more common than it would have been, and Common Reed can exclude other species by virtue of its height and density of stems.

The pre-history of the area

Thanks to studies of the peat soils and the pollen contained within (e.g. Mansell *et al.*, 2014) we can see some of the species that existed from the fen peats of the Torne valley/wider Potteric Carr from the end of the last ice age (after which peatlands started forming in this area) to more recent times. This sample was downstream near to Hatfield moor, but on the fen peat, not bog peat, so is close to the current Potteric Carr nature reserve.

However, a number of species that are still recognisable today have been around in varying amounts for thousands of years, some of them being Common reed, Duckweeds, *Lemna* spp, and Bur reeds, *Sparganium* spp. The study of sub-fossil remains of beetles in the peat also gives us good indication of the habitats, and in the case of some species-specific beetles, the plant species that were found in different periods.

Species like Lime *Tilia* spp. were much more common in the past, and there is a distinct decline in Elm *Ulmus* spp. similar to more recent Dutch Elm Disease decline. Pine *Pinus* spp. declined more than 7,000 years ago never to return. Species like Alder *Alnus glutinosa*, Birches *Betula* spp. and Willows *Salix* spp. have been present throughout the last 7,000 years and are still common in the area now. There is also a number of shifts observable from peat samples, from more open water dominated periods to well vegetated pools and fens and back again, showing that hydrology and ecology has changed much over the last 10,000 years, albeit in a limited way between different wetland type habitats (and not to very dry conditions).

The future of Potteric Carr

Potteric Carr is luckily a Yorkshire Wildlife Trust nature reserve and so is likely to be well managed for its flora into the future. Given the expansion of the nature reserve (from 12ha in 1968, to 220ha now, plus satellite sites) it has the potential for the flora to become more secure; species with limited locations on site could be introduced into recreated or restored habitats to secure their toe hold in the area. Further areas are likely to be acquired in the short to medium term (associated with the housing development at Manor farm, and another extension to the east at Betwixt fen) where areas of peatland soils remain, though very degraded compared to the soils of the older parts of Potteric carr. These extensions/satellite sites are perhaps areas to experiment with more.

In the past the fen habitat would have been much more extensive, and as shown in the Mansell (2014) study it would have fluctuated in wetness. However, given the larger extent, fewer barriers, and varied topography there would have been great refuges to retreat to/expand from as conditions changed. This habitat would have been more resilient to change. Perhaps some new fen, wet grassland and wet woodland habitat can be created in expansions of Yorkshire Wildlife Trust land. However, introduction of bog species is unlikely to be successful, at least in the next few decades given the lack of suitable hydrology/soil nutrient levels.

Perhaps as well as addressing the biodiversity crisis we face, care could be taken to address the climate crisis too. Species like Tufted sedge are locally extinct, and Greater Tussock Sedge *Carex paniculata*, is rare on site, but these are the peat building species of fens, and could be encouraged to be the architectural species of recreated habitats around which other species are introduced, as well as sequestering carbon and repairing the damage to the peat soils.

Conclusion

So despite the loss of many species Potteric Carr remains an important site for its plants. Use of historic records could aid planning of future habitat recreation of the wider Potteric carr/Torne valley, and ongoing management of the sites can secure what is still relict. Some species are gone for the foreseeable future, as the habitat conditions no longer exist, but over a longer timeframe many of the lost species could successfully be reintroduced into suitable habitats. A lesson to draw from this look back at the flora of Potteric Carr, is that accurate records (location, date, species) are important for understanding changes over time, and that submitting records to the county recorder may be useful to our successor naturalists and conservationists.

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If you go down to the woods today, you're sure of a small surprise... A tardigrade survey in and around York

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Introduction

Tardigrades, also known as 'water bears' or 'moss piglets', are ubiquitous and remarkably hardy microscopic animals. Some tardigrades can enter a state of suspended animation ('cryptobiosis') that allows them to withstand adverse conditions including freezing, high temperatures, anoxia, high pressure, drought, intense ionising radiation, and even the vacuum

of space (Elleuche, 2021). There are two major groups of tardigrade: the eutardigrades or 'naked water bears' (Class Eutardigrada) and heterotardigrades or 'armoured water bears' that generally have protective plates on their dorsal cuticle (Class Heterotardigrada) (Romano III, 2003). Eutardigrades need moist environments to thrive, whereas heterotardigrades tend to be found in drier environments.

Tardigrades are poorly recorded in Britain, although surveys by Nattress *et al.* (2014) from 2008 to 2013 have improved our understanding of Yorkshire's tardigrade fauna (the authors also review the scant historic Yorkshire tardigrade records). In 2021, JT decided to survey the tardigrades of St Nicholas Fields Local Nature Reserve (colloquially known as 'St Nicks') in York (VC62), as well as taking samples from several other areas in and around Yorkshire. To our knowledge, this is the first Yorkshire tardigrade survey since that of Nattress *et al.* (2014), and we compare our findings to theirs in this article.

Materials and methods

During the 12 months from December 2021, JT took samples from each of the 18 principal 100m x 100m grid squares that make up the St Nicks site. St Nicks is a small but remarkably biodiverse 10ha urban nature reserve, previously brickpits and a landfill site, that now features a variety of habitats including meadows, hedgerow, scrub, woodland, streams (Osballdwick and Tang Hall Becks), and human embellishments of boulders, bricks, rubble, tarmac, concrete and gravel (for a more in-depth description of the site, see Buckton (2021) and Buckton (2022)). The main survey of St Nicks was completed by April 2022, but samples continued to be taken sporadically throughout the year. Two to three samples (including leaf litter, mosses, liverworts, and lichens on bark and twigs) were collected from each grid square during the 2-hour weekly volunteer Wildwatch survey on Wednesday mornings and taken home in plastic sample tubes for analysis. During the same period, JT also collected samples from other locations visited in Yorkshire, using a similar collection method.

Samples were kept loosely lidded in a cool garage before processing, at which point tap water was added to the containers to just cover the samples, and left to soak overnight. The next day, the samples were shaken (with the lid on!) to dislodge the tardigrades into the water, and the water was poured out into a Petri dish. The sample was squeezed over the dish to remove additional water. After leaving the water to settle for a short while, excess water was removed from the Petri dish with a pipette to leave only a few millimetres depth (tardigrades sink, so the water was removed from the surface). The remaining water was inspected for tardigrades using a Brunel BMSZ trinocular zoom stereo microscope at approximately 20-40x magnification (the largest tardigrades were nearly 0.9mm, the smallest 0.15mm). The dish was placed on a black background, and side lighting was used to highlight the tardigrades.

An Irwin Loop was used to transfer tardigrades onto a slide for closer inspection. The Loop was made by twisting thin wire (e.g. 5A fuse wire) tightly around a pin, then mounting this into a round wooden handle. The Loop is used to gently waft the tardigrades up to the surface of the water, where they are removed inside a drop of water and placed into another small drop of water on a slide. Adding a drop of dilute ethanoic acid can then quickly kill and relax the tardigrades (Brian Blagden, pers. comm.). JT found white vinegar diluted 50:50 with distilled water to be effective, also giving a partial clearing effect, but it was still sometimes difficult to see internal structures. The tardigrades were left in this solution for c. 30 minutes before being observed with a Brunel SP30 LED compound microscope. Later an elderly Nikon Phase Contrast microscope was acquired and refurbished by JT, which improved the visibility of many diagnostic features. It was found that using crossed polarising filters with the Brunel microscope highlighted the tardigrade's gut contents and other internal structures (Figure 1). Photographs

were taken with a Fuji X-A5 camera using various adapters to mount the camera onto the microscopes. A few samples were mounted in Hoyer's medium to make permanent slides.

Identification was achieved initially by keying out using various keys found online. We found the key by Bingemer & Hohberg (2017) particularly useful. Later, a copy of Dastych (1988) was obtained, which made keying out much easier. Seeing details of the claws and feeding apparatus is important for identification of eutardigrades (Gasiorek, P. *et al.*, 2019), but for heterotardigrades it is more important to see the detail of the cuticular plates and various dorsal appendages (hair-like structures) and spines (Romano III, 2003). However, many tardigrades are only identifiable to species level by means of detailed analysis of morphological structures, which was beyond the scope of this study. For instance, Gasiorek *et al.* (2018) discuss identification of the *Hypsibius dujardini* complex in detail, and Stec *et al.* (2018) the identification of members of the *Ramazzottius oberhaeuseri* complex (Figure 1, below). We use 'cf.' (*confer*), 'aff.' (*species affinis*) and 'nom. inq.' (name to be queried, *i.e.* the species requires redescription) to denote relatively uncertain identifications, following recommendations by Brian Blagden (pers. comm.): 'aff.' denotes a possible undescribed species with affinity to (but differences from) an existing species, whilst 'cf.' is for uncertain identifications that are close to (and possibly are) an existing species. SB provided several bryophyte and lichen identifications.



Figure 1. The eutardigrade *Ramazzottius* aff. *oberhaeuseri* under crossed polarising filters (LED compound microscope), highlighting the muscles (blue) and gut contents (sparkles). The stylets (part of the feeding apparatus) are also highlighted. The tardigrade is c. 255µm long.

Photo: Jane Thomas

Photo albums of tardigrade specimens were created by JT on Flickr, including an album for Yorkshire tardigrades (<https://flic.kr/s/aHBqjA6pDz>) and a crib for all species found by JT thus far in Yorkshire and beyond (<https://flic.kr/s/aHBqjA4tMG>).

Tardigrades were found in all St Nicks grid squares and all microhabitat types sampled. Nine different tardigrade 'species' were found at St Nicks, and another two from other locations in Yorkshire, although many of these could only be identified to species groups (see 'Systematic accounts' below). Three species were not recorded by Nattress *et al.* (2014) and are therefore considered new to Yorkshire: *Milnesium* cf. *variefidum* (Figure 2), *Hypsibius* cf. *convergens* (Figure 3) and *Isohypsibius schaudinni* nom. inq. (Figure 4). Although they are also absent from the UK Species Inventory, they are known from elsewhere in Britain (Brian Blagden, pers. comm.). We also found the tardigrade symphoriont *Pyxidium tardigradum* (a ciliate) new to Yorkshire and the fourth published British record, the most northerly in Britain to date.



Figure 2. The eutardigrade *Milnesium* cf. *variefidum* as seen under a compound light microscope, including detail of the peribuccal and cephalic papillae and mouth tube (bottom left) and claws (bottom centre and right). The tardigrade is c. 800µm long.

Photos: Jane Thomas.

Figure 3. The eutardigrade *Hypsibius* cf. *convergens* as seen under a compound light microscope, including detail of the buccal apparatus (bottom left) and claws (bottom centre and right). The tardigrade is approx. 300µm long.

Photos: Jane Thomas.



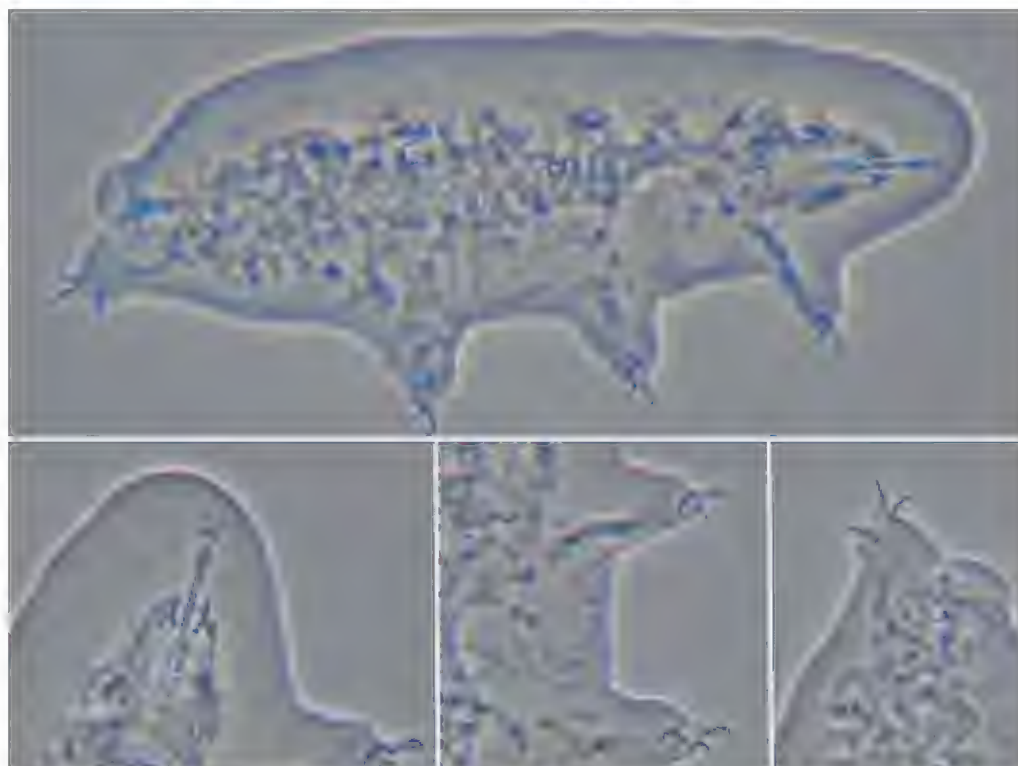


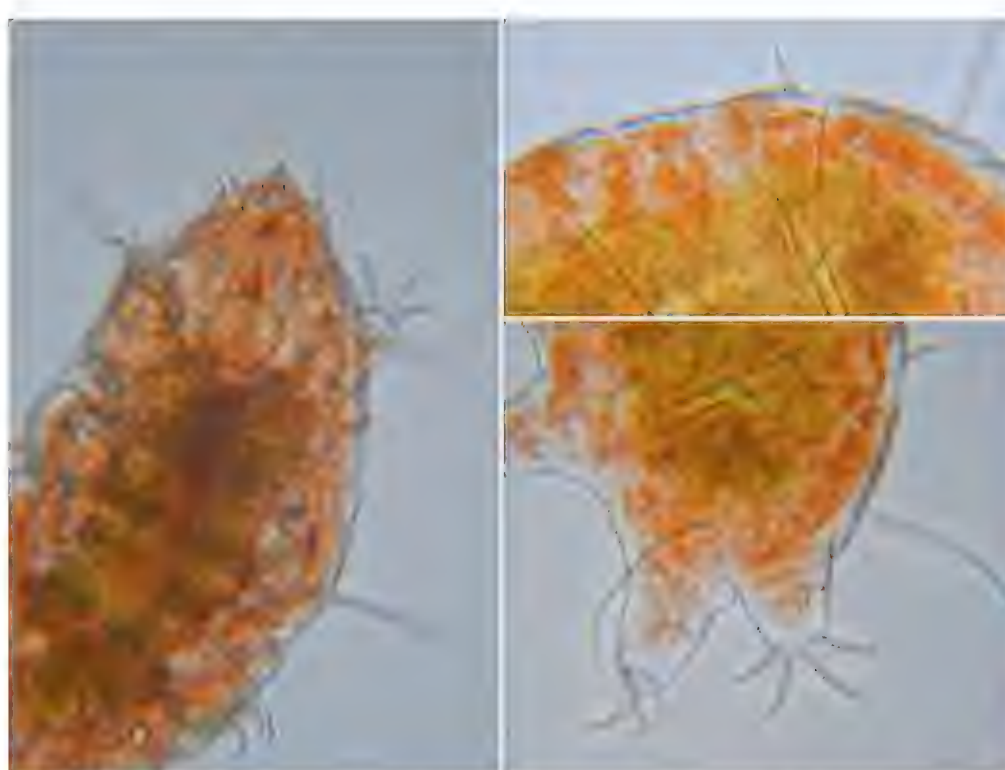
Figure 4. The eutardigrade *Isohypsibius schaudinni* nom. inq. as seen under a phase contrast microscope, including detail of the buccal apparatus (bottom left) and claws (bottom centre and right). The tardigrade is approx. 340µm long.

Photos: Jane Thomas.

All species found bar one, *Echiniscus testudo* (including *E. testudo* var. *trifilis*) (Figure 5), were eutardigrades, although this heterotardigrade was often found together with eutardigrades - the combination of *E. testudo* and *Macrobiotus* cf. *hufelandi* was common in moss from house gutters in York (as well as other locations outside Yorkshire, based on other surveys by JT). The commonest 'species' at St Nicks was the eutardigrade *Ramazzottius* aff. *oberhaeuseri*. Dastyh (1988) found this to be a numerous and widely distributed species in Poland often associated with synanthropic habitats. This group is also one of the easiest to identify as the body usually has a chequered pattern of light brown, and very distinctive claws, the outer claws bearing a long, thin branch. Confirmation of the identification was from the arrangement of macroplacoids in the feeding apparatus and the discovery of the distinctive eggs of this group, which are used to separate the *oberhaeuseri* group from other *Ramazzottius* species (see Figure 6 for a selection of tardigrade eggs).

Figure 5. The heterotardigrade ('armoured water bear') *Echiniscus testudo* var. *trifilis* as seen under an LED compound microscope, including detail of the head appendages (left), spines on the dorsal plates (top right) and spine fringe on legs IV (bottom right). The tardigrade is approx. 300µm long. A photograph of the complete animal is on the Front Cover.

Photos: Jane Thomas.



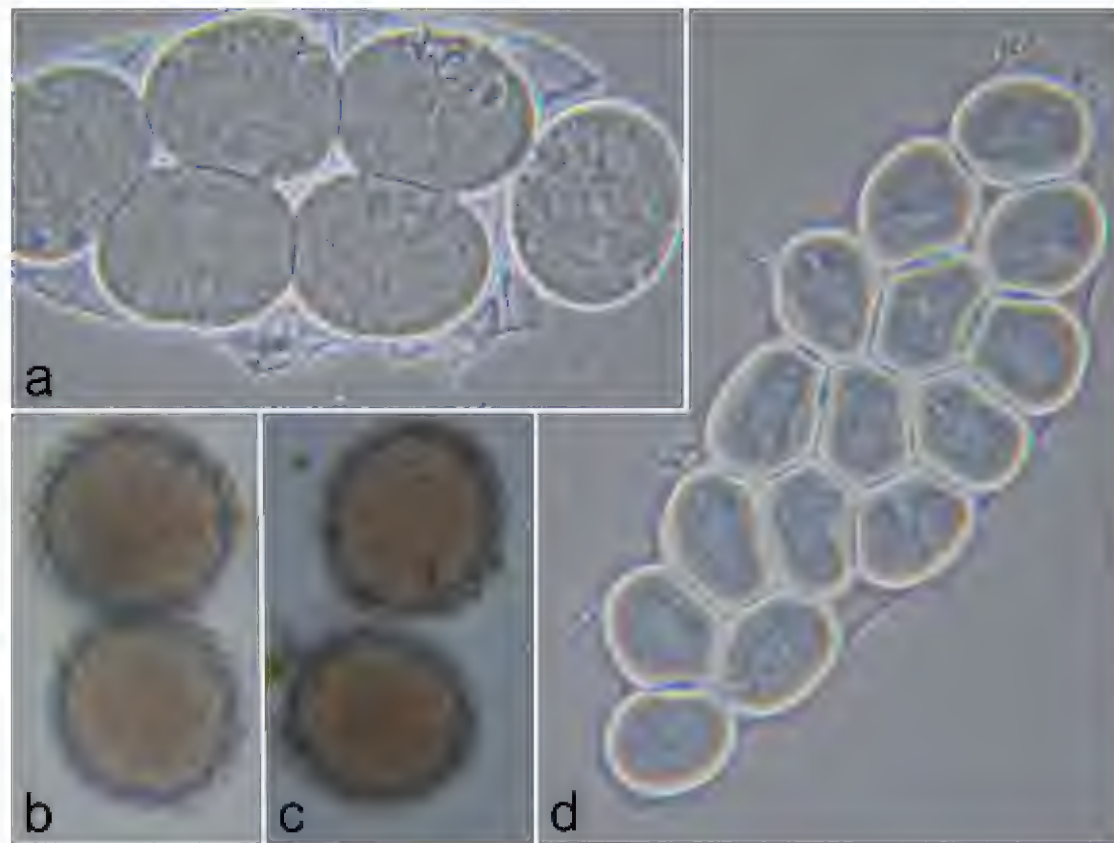


Figure 6 (above). A selection of different eutardigrade eggs: a) *Isohypsibius prosostomus* eggs inside the mother's shed skin (each egg c. 65µm in diameter), as seen under a phase contrast microscope. The developing mouthparts of the embryos are visible inside the eggs, and the diagnostic cuticular bars are visible next to the claws of the shed skin; b) *Ramazzottius* aff. *oberhaeuseri* (c. 60µm diameter) under a compound light microscope; c) *Macrobiotus* cf. *hufelandi* (c. 80µm diameter) under a compound light microscope; and d) *Hypsibius* cf. *dujardini* eggs inside the mother's shed skin (each egg c. 55µm in diameter), as seen under a phase contrast microscope.

Photos: Jane Thomas.

Other small organisms found in the samples included nematode worms, *Paramecium* and various other ciliates and rotifers, which are perhaps more familiar from pond water. One of the ciliates, *Pyxidium tardigradum*, was particularly notable (Figure 7). We found this on three different species of tardigrade (*M.* cf. *variefidum*, *R.* aff. *oberhaeuseri* and *M.* cf. *hufelandi*) at several different locations in Yorkshire. *P. tardigradum* is an epizoon symphoriont (an organism carried and often also dispersed by its host) living on eutardigrades, and is very rarely recorded. Little is known about the effect on the tardigrade host (Vicente *et al.*, 2008). There are only three previous published UK records: Morgan (1976) from around Swansea; Wright (1991) from around Oxford; and Marley & Wright (1994) from around Plymouth. Our records thus appear to be the first for Yorkshire, and currently the furthest north in England. JT has created a Flickr album with more images and videos of *Pyxidium* (<https://flic.kr/s/aHBqjA8AbD>). In addition, we found *Isohypsibius prosostomus* at St Nicks with very fine filaments emerging from its claws (Figure 8), possibly a fungus, although little is known about the interactions between tardigrades and fungi (Loeffelholz *et al.*, 2021).

Discussion

We found tardigrades to be ubiquitous in sampled areas in Yorkshire. We refound many of the species recorded by Nattress *et al.* (2014), although we did not refind 18 species and one variety (*E. testudo* var. *quadrifilis*), including three *Batillipes* spp., three *Diphascon* spp., three species in the hypsibiid subfamily Itaquasconinae (erroneously referred to as a family in Nattress *et al.* (2014)), and a number of macrobiotids. Further sampling, including in the areas visited by Nattress *et al.* (2014), would almost certainly fill the gaps. The three new Yorkshire tardigrade species, found even from our very limited geographical survey, suggest that there

must be numerous discoveries like these still to be made in the county. Drier habitats may be more likely to yield heterotardigrades, as our survey would corroborate.

Pyxidium tardigradum is probably more common in Britain than records suggest, and the authors would be very interested to hear of any further observations. JT has supplied samples to a project running in the department of Professor Łukasz Michalczyk at the Jagiellonian University in Kraków, Poland to further understand the distribution and biology of *P. tardigradum*, and is sure that records will be forthcoming from other areas of the UK. JT has also supplied samples to the same laboratory to inform a study of the taxonomy of *Ramazzottius* spp., which may uncover further interesting new records for Yorkshire.



Figure 7 (above). The eutardigrade *Macrobiotus* cf. *hufelandi* with the epizoan symphoriont *Pyxidium tardigradum* (a ciliate) attached (three balloon-like structures at the left end), as seen under an LED compound microscope. The tardigrade is c. 380µm long, and the *P. tardigradum* c. 35µm long.
Photo: Jane Thomas.



Figure 8. The eutardigrade *Isohypsibius prosostomus* with fine filaments emerging from its claws, possibly a parasitic fungus, as seen under an LED compound microscope. The tardigrade is c. 200µm long.
Photo: Jane Thomas.

Systematic accounts

Species with an asterisk (*) were not recorded by Nattress *et al.* (2014). A dagger (†) denotes that *Pyxidium tardigradum* was found in the sample.

Family Batillipedidae

***Batillipes* sp.** Cayton Bay: sand (intertidal) (TA064852).

Family Echiniscidae

Echiniscus testudo (Doyère, 1840). Bishopthorpe: moss from house gutter (SE588476).

Echiniscus testudo* var. *trifilis (Doyère, 1840). St Nicks: Great Hairy Screw-moss *Syntrichia ruralis* in car park (SE616516).

Family Milnesiidae

Milnesium* cf. *variefidum* (Morek, Gąsiorek, Stec, Blagden & Michalczyk, 2016).

St Nicks: *Physcia adscendens* lichen on twig of Hawthorn *Crataegus monogyna* (SE616518). Bishopthorpe riverside: lichen-covered twig (SE598477). Boggle Hole Woods: lichen-covered twig† (NZ954039).

Milnesium* cf. *tardigradum (Doyère, 1840). Acaster Malbis: *Xanthoria* lichen on twig of Hawthorn (SE595455).

Family Hypsibiidae

Hypsibius* cf. *convergens* (Urbanowicz, 1925). St Nicks: bark (SE615515); leaf litter (SE616515); lichen-covered bark (SE616518).

Hypsibius* cf. *dujardini (Doyère, 1840). St Nicks: moss-covered bark (SE615516); bark (SE615519); *Xanthoria* lichen on twig (SE616518); lichen on Alder *Alnus glutinosa* (SE616519). Acaster Malbis: moss from gravestone (SE953458).

Isohypsibius prosostomus Thulin, 1928. St Nicks: pleurocarpous moss (SE613519); moss-covered bark (SE615516); bark (SE615519); leaf litter (SE616515). Naburn: *Xanthoria* and *Physcia adscendens* lichens from Hawthorn (SE600458). Acaster Malbis: moss from gravestone (SE953458). Cayton Bay cliff path: *Xanthoria* lichen on Hawthorn (TA062849 & TA063848).

Isohypsibius schaudinni* (Richters, 1909) nom. inq. St Nicks: lichen from Alder (SE616519).

Ramazzottius* aff. *oberhaeuseri (Doyère, 1840). St Nicks: lichen-covered bark (SE613519); lichen-covered twig (SE614519 & SE618515); epiphytic moss (SE615517); bark (SE616517 & SE618518); epiphytic moss and *Xanthoria* lichen on twig† (SE616518); lichen from Alder† (SE616519); lichen-covered bark (SE617515 & SE617519). Askham Bog: lichen-covered twig of Ash *Fraxinus excelsior* (SE574481). Bishopthorpe Cycle Path: lichen-covered twig of oak *Quercus* sp. (SE591471). Church Ings: *Xanthoria* on Hawthorn (SE595455). Bishopthorpe Cricket Club hedge: *Xanthoria* lichen on Hawthorn (SE596475). Howden Lane, Naburn: *Xanthoria* and *Physcia adscendens* lichens from Hawthorn (SE600458); Naburn Station, cycle path: lichen-covered twig (SE600461). Skipwith Common: lichen-covered twigs under oak (SE654374 & SE667377). Acaster Malbis, Holy Trinity: *Xanthoria* from Hawthorn (SE953458). Osgodby Hill, Cayton Bay: lichen-covered twig of Blackthorn *Prunus spinosa* (TA060848).

Family Macrobotidae

Macrobotus* cf. *hufelandi Schulze, 1933. St Nicks: Wall Screw-moss *Tortula muralis* on one of the Dragon Stones (SE616518); bark (SE618517 & SE618518). Ravenscar Pond: lichen-covered twig (NZ975016). Bishopthorpe: moss from house gutter (SE588476). Church Ings: *Xanthoria* on Hawthorn† (SE595455). Osgodby Hill, Cayton Bay: lichen-covered Blackthorn twig (TA060848).

Paramacrobotus* cf. *richtersi (Murray, 1911). St Nicks: leaf litter (SE617517 &

SE617518); lichen-covered bark, woodland (SE617519); bark, woodland (SE618515).
Bishopthorpe: moss from house gutter (SE588476).

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Author contributions

JT conducted all fieldwork and microscopy. JT and SB wrote, reviewed and edited the paper.

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Yorkshire Heteroptera – Part 3

Cimicomorpha 2 –Miroidea, Miridae – Bryocorinae, Deraeocorinae and Mirinae

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Introduction

The Miridae are the most abundantly represented Family of plant bugs within the Miroidea, many are phytophagous and although some species cause leaf damage when feeding few are agricultural or horticultural pests in Britain. The Subfamily Deraeocorinae are predominantly entomophagous. In Britain there are 103 recorded species representing the three subfamilies addressed in this paper; at present 85 of these are recorded from Yorkshire. Overall, the number of records held by the YNU is insufficient to truly represent current distribution and status.

The following list is the third of six parts which represent all currently recorded Yorkshire Heteroptera together with associated Vice Counties, statuses, hosts/habitats and years for the first and latest records (see *The Naturalist* 1107 and 1108 for parts 1 and 2). The host data are indicative only as some overwinter as adults on evergreen plants, shrubs and trees, while continental food plants may differ from British records, and some are poly-phytophagous. Some species can only be identified by dissection of male specimens. Consequently, where the female cannot be reliably identified, or where specimens are unavailable for examination, such records are indicative only and may not have been validated. Several historic records fall into this group.

The status convention is based on: 1 to 9 records = Rare; 10 to 24 = Scarce; 25 to 49 = Uncommon; 50 to 99 = Frequent; 100 to 199 = Common; 200 or more = Very Common.

The taxonomy of European Hemiptera is relatively well documented for many countries (Aukema & Rieger, 1999; Aukema *et al.*, 2013). The Bibliography below includes publications which may assist in the identification of specimens.

Infraorder: Cimicomorpha

Superfamily: Miroidea

Family: **MIRIDAE** Hahn, 1833

Subfamily: BRYOCORINAE Baerensprung, 1860

Tribe: BRYOCORINI Baerensprung, 1860

Bryocoris pteridis (Fallén, 1807)

VC61, VC62, VC63, VC64, VC65: common, ferns, 1921-2022.

Monalocoris filicis (Linnaeus, 1758)

VC61, VC62, VC63, VC64, VC65: very common, Bracken *Pteridium aquilinum*, 1921-2022.

Tribe: DICYPHINI Reuter, 1883

Campyloneura virgula (Herrich-Schaeffer, 1836)

VC61, VC62, VC63, VC64, VC65: common, deciduous trees, 1933-2022.
Dicyphus (Brachyceroea) annulatus (Wolff, 1804)
 VC61, VC62, VC63: uncommon, Restharrow *Ononis repens*, 1921-2020.
Dicyphus (Brachyceroea) globulifer (Fallén, 1829)
 VC61, VC62, VC63, VC64, VC65: common, campions, 1921-2021.
Dicyphus (Idolocoris) pallicornis (Fieber, 1861)
 VC61, VC62, VC63, VC64, VC65: frequent, Foxglove *Digitalis purpurea*, 1921-2022.
Dicyphus pallidus (Herrich-Schaeffer, 1836)
 VC61: single record, Hedge Woundwort *Stachys sylvatica*, 2021.
Dicyphus constrictus (Boheman, 1840)
 VC61, VC62, VC63, VC64, VC65: scarce, hedgerow vegetation, 1921-2007
Dicyphus epilobii Reuter, 1883
 VC61, VC62, VC63, VC64, VC65: very common, Hairy Willowherb *Epilobium hirsutum*, 1921-2022.
Dicyphus errans (Wolff J.F., 1804)
 VC61, VC62, VC63, VC64, VC65: frequent, hedgerow vegetation, 1921-2022.
Dicyphus escalerae Lindberg, 1934
 VC61, VC63: rare, recent introduction to Britain on *Antirrhinum majus*, 2019-2022.
Dicyphus stachydis stachydis J. Sahlberg, 1878
 VC61, VC62, VC63, VC64, VC65: very common, Hedge Woundwort, 1921-2022.
Macrolophus pygmaeus (Rambur, 1839)
 VC61, VC62, VC63, VC64: uncommon, Hedge Woundwort, 1921-2016.
Macrolophus rubi Woodroffe, 1957
 VC61, VC63: scarce, brambles, 1984-2016.
Tupiocoris rhododendri (Dolling, 1972) see photo p 40.
 VC61, VC62, VC63: scarce, rhododendrons, 1985-2016.

Subfamily: DERAEOCORINAE Douglas & Scott, 1865

Tribe: CLIVINEMATINI Reuter, 1876

Bothynotus pilosus (Boheman, 1852)

VC64: rare, a single record, moss in woodland, 1985.

Tribe: DERAEOCORINI Douglas & Scott, 1865

Alleotomus gothicus (Fallén, 1807)

VC61, VC62, VC63, VC64: scarce, Scots Pine *Pinus sylvestris*, 1980-2009.

Deraeocoris flavilinea (A. Costa, 1862)

VC61, VC63: frequent, predator, hedgerow vegetation, 1992-2021.

Deraeocoris ruber (Linnaeus, 1758)

VC61, VC62, VC63, VC64, VC65: very common, hedgerow vegetation, 1927-2022.

Deraeocoris scutellaris (Fabricius, 1794)

VC62, VC65: rare, heaths and Hazel *Corylus avellana*, 1936-2002.

Deraeocoris (Knightocapsus) lutescens (Schilling, 1837)

VC61, VC62, VC63, VC64, VC65: common, predator, trees and shrubs, 1970-2022.

Subfamily: MIRINAE Hahn, 1833

Tribe: MIRINI Hahn, 1833

Adelphocoris lineolatus (Goeze, 1778)

VC61, VC62, VC63: uncommon, Restharrow, 1949-2022.

Adelphocoris seticornis (Fabricius, 1775)

VC61: rare, single record, 1850.

Agnocoris reclairi (Wagner, 1949)

VC61, VC63: rare, White Willow *Salix alba*, 2007-2016.

Apolygus lucorum (Meye-Dür, 1843)

VC61, VC62, VC63, VC64, VC65: common, Nettle, Mugwort *Artimesia vulgaris*, Tansy *Tanacetum vulgare*, 1921-2022.

Apolygus spinolae (Meye-Dür, 1841)

VC61, VC62, VC63, VC64, VC65: frequent, Creeping Thistle *Cirsium arvense*, brambles, nettles, 1975-2022.

Calocoris alpestris (Meyer-Dur, 1843)

VC61, VC62, VC63, VC64, VC65: common, nettles, 1921-2017.

Calocoris roseomaculatus roseomaculatus (DeGeer, 1773)

VC61, VC62, VC63, VC64: scarce, Yarrow *Achillea millefolium*, Ox-eye Daisy *Leucanthemum vulgare*, 1932-2016.

Camptozygum aequale (Villiers, 1789)

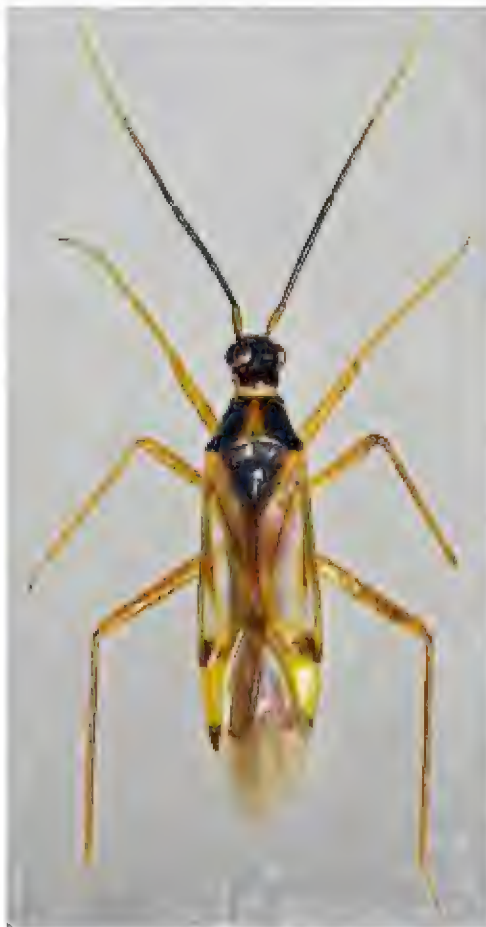
VC61, VC62, VC63, VC64, VC65: uncommon, Scots Pine, 1921-2019.

Capsodes gothicus (Linnaeus, 1758)

VC61, VC62, VC63: scarce, Bird's-foot Trefoil *Lotus corniculatus*, 1931-2022.

Capsus ater (Linnaeus, 1758)

VC61, VC62, VC63, VC64, VC65: very common, long grasses, 1921-2022.



Left: The scarce *Tupiocoris rhododendri* found at Hollicars Wood 4 August 2016 on Rhododendron.

Centre: The scarce *Lygus pratensis* found at Edenthorpe.

Right: The rare *Acertropis gimmerthalii* found at Blaxton.

- Capsus wagneri*** (Remane, 1950)
VC61, VC63, VC64: scarce, Purple Small Reed *Calamagrostis canescens* and Wood Small Reed *Calamagrostis epigejos* in fens, 1943-2020.
- Charagochilus gyllenhali*** (Fallén, 1807)
VC62, VC63, VC64, VC65: uncommon, dry and sandy places on bedstraws, 1921-2022.
- Closterotomus fulvomaculatus*** (DeGeer, 1773)
VC62, VC63, VC64: scarce, hedgerows, 1921-1987.
- Closterotomus norwegicus*** (Gmelin, 1790)
VC61, VC62, VC63, VC64, VC65: very common, hedgerows, 1921-2022.
- Dichroscytus gustavi*** Josifov, 1981
VC63: rare, single record, Lawson's Cypress *Chamaecyparis lawsoniana*, 2020.
- Dichroscytus rufipennis*** (Fallén, 1807)
VC61, VC62, VC63, VC64: scarce, Scots Pine, 1921-2019.
- Grypocoris (Lophyromiris) stysi*** (Wagner, 1968)
VC61, VC62, VC63, VC64, VC65: very common, nettles, 1921-2022.
- Liocoris tripustulatus*** (Fabricius, 1781)
VC61, VC62, VC63, VC64, VC65: very common, nettles, 1921-2022.
- Lygocoris (Neolygus) contaminatus*** (Fallén, 1807)
VC61, VC62, VC63, VC64, VC65: common, Silver Birch *Fraxinus excelsior*, Alder *Alnus glutinosa*, nettles, 1921-2022.
- Lygocoris (Neolygus) populi*** Leston, 1957
VC61, VC63, VC64: rare, White Poplar *Populus alba*, 1987-2022.
- Lygocoris (Neolygus) viridis*** (Fallén, 1807)
VC61, VC62, VC63, VC64, VC65: common, limes, Alder, oaks, 1921-2020.
- Lygocoris pabulinus*** (Linnaeus, 1761)
VC61, VC62, VC63, VC64, VC65: very common, hedgerows, 1921-2022.
- Lygocoris rugicollis*** (Fallén, 1807)
VC61, VC62, VC63, VC64, VC65: frequent, willows, Bog Myrtle *Myrica gale*, 1921-2021.
- Lygus maritimus*** Wagner, 1949
VC61, VC62, VC63: scarce, mainly coastal but inland on a variety of herbaceous plant, historically *L. rugulipennis* has been misidentified as this bug, 1995-2020.
- Lygus pratensis*** (Linnaeus, 1758) (see photo p 40)
VC61, VC62, VC63, VC64: uncommon, hedgerow plants and early coloniser of disused fields, historically *L. wagneri* has been misidentified as this bug, 2003-2022.
- Lygus punctatus*** (Zetterstedt, 1838)
VC62, VC65: rare, boreo-alpine, 1947-1987.
- Lygus rugulipennis*** Poppius, 1911
VC61, VC62, VC63, VC64, VC65: very common, wide variety of herbaceous plants and shrubs, 1930-2022.
- Lygus wagneri*** Remane, 1955
VC61, VC62, VC63, VC64: uncommon, mainly heathland, 1968-2022.
- Megacoelum infusum*** (Herrich-Schaeffer, 1837)
VC61, VC62, VC63, VC64: frequent, oaks, 1935-2022.
- Miris striatus*** (Linnaeus, 1758)
VC61, VC62, VC63, VC64, VC65: frequent, oaks, 1921-2020.
- Orthops basalis*** (A. Costa, 1853)
VC61, VC62, VC63, VC64: uncommon, umbellifers, 1978-2022.

- Orthops campestris*** (Linnaeus, 1758)
VC61, VC62, VC63, VC64: common, umbellifers, 1921-2022.
- Orthops kalmii*** (Linnaeus, 1758)
VC61, VC62, VC63: scarce, umbellifers, 1921-2021.
- Pinalitus cervinus*** (Herrich-Schaeffer, 1841)
VC61, VC62, VC63, VC64, VC65: common, umbellifers, 1921-2022.
- Pinalitus rubricatus*** (Fallén, 1807)
VC61, VC62, VC63, VC64, VC65: scarce, umbellifers, 1921-2004.
- Pantilius tunicatus*** (Fabricius, 1781)
VC61, VC62, VC63, VC64, VC65: frequent, Hazel *Corylus avellana*, 1921-2021.
- Phytocoris (Ktenocoris) ulmi*** (Linnaeus, 1758)
VC61, VC62, VC63, VC64, VC65: common, hedgerow trees, 1921-2020.
- Phytocoris (Ktenocoris) varipes*** Boheman, 1852
VC61, VC62, VC63, VC64, VC65: common, long grasses, 1921-2022.
- Phytocoris dimidiatus*** Kirschbaum, 1856
VC61, VC62, VC63, VC64: uncommon, deciduous trees, 1921-2002.
- Phytocoris longipennis*** Flor, 1861
VC61, VC62, VC63, VC64, VC65: common, deciduous trees, 1921-2022.
- Phytocoris pini*** Kirschbaum, 1856
VC61, VC62, VC63, VC64, VC65: uncommon, Scots Pine, 1921-1994.
- Phytocoris populi*** (Linnaeus, 1758)
VC61, VC62, VC63, VC64, VC65: scarce, deciduous trees, 1921-2013.
- Phytocoris reuteri*** Sanders, 1875
VC61, VC62, VC63: uncommon, deciduous trees in hedgerows, 1967-2022.
- Phytocoris tiliae tiliae*** (Fabricius, 1777)
VC61, VC62, VC63, VC64, VC65: common, deciduous trees, 1921-2022.
- Polymerus (Poeciloscytus) palustris*** (Reuter, 1907)
VC61, VC62, VC63, VC64: scarce, Marsh Bedstraw *Galium palustre*, 1954-2017.
- Polymerus (Poeciloscytus) unifasciatus*** (Fabricius, 1794)
VC61, VC62, VC63, VC64: scarce, bedstraws, 1921-2014.
- Polymerus nigrita*** (Fallén, 1807)
VC61, VC62, VC63, VC64, VC65: frequent, Goosegrass *Galium aparine*, 1931-2021.
- Rhabdomiris striatellus striatellus*** (Fabricius, 1794)
VC61, VC62, VC63, VC64, VC65: common, oaks, 1921-2018.
- Stenotus binotatus*** (Fabricius, 1794)
VC61, VC62, VC63, VC64, VC65: very common, hedgerow verges and neglected pastures, 1921-2022.
- Tribe: STENODEMINI China, 1943
- Acertropis gimmerthalii gimmerthalii*** (Flor, 1860) see photo p40.
VC61, VC62, VC63: rare, uncut grasses on commons, marshes, waste ground, 1973-2019.
- Leptopterna dolobrata*** (Linnaeus, 1758)
VC61, VC62, VC63, VC64, VC65: very common, grassy places, 1921-2022.
- Leptopterna ferrugata*** (Fallén, 1807)
VC61, VC62, VC63, VC64, VC65: very common, grasses in meadows, 1921-2022.
- Megaloceroea recticornis*** (Geoffroy in Fourcroy, 1785)
VC61, VC62, VC63, VC64: common, long grasses in margins of woods and damp commons, 1936-2022.

Notostira elongata (Geoffroy in Fourcroy, 1785)
VC61, VC62, VC63, VC64, VC65: very common, grasses, 1921-2022.

Pithanus maerkelii (Herrich-Schaeffer, 1838)
VC61, VC62, VC63, VC64, VC65: very common, grasses, 1921-2022.

Stenodema (Brachystira) calcarata (Fallén, 1807)
VC61, VC62, VC63, VC64, VC65: very common, grasses, 1921-2022.

Stenodema (Brachystira) trispinosa Reuter, 1904
VC61, VC63: uncommon, sedges in marshy meadows, 1969-2017.

Stenodema holsata (Fabricius, 1787)
VC61, VC62, VC63, VC64, VC65: very common, upland pastures with Purple Moor Grass *Molinia caerulea* and damp acid woodlands, 1921-2022.

Stenodema laevigata (Linnaeus, 1758)
VC61, VC62, VC63, VC64, VC65: very common, grasses, 1921-2022.

Teratocoris antennatus (Boheman, 1852)
VC61, VC63: rare, in marshes and swamps, 1921-1986.

Teratocoris saundersi saundersi Douglas & Scott, 1869
VC61, VC62, VC63, VC64, VC65: uncommon, marshes and saltmarshes, 1921-2019.

Teratocoris viridis Douglas & Scott, 1867
VC62, VC63, VC64, VC65: scarce, northern marshes and edges of rivers and lakes, 1934-1990.

Trigonotylus caelestialium (Kirkaldy, 1902)
VC61, VC62, VC63: uncommon, grasses, 1971-2022.

Trigonotylus psammaecolor Reuter, 1885
VC61: rare, marram grass *Ammophila arenaria* on coastal sand dunes, 1972-2001.

Trigonotylus ruficornis (Geoffroy in Fourcroy, 1785)
VC61, VC62, VC63, VC64, VC65: common, dry grassy places, 1921-2022.

Taxonomic Changes since Le Quesne & Payne (1981) and adopted herein:

BRYOCORINAE - DICYPHINI:

Macrolphus nubilus (Herrich-Schaeffer) is now *Macrolophus pygmaeus* (Rambur, 1839).

Dicyphus escalerae Lindberg, 1934 is new to Britain.

Tupiocoris rhododendri (Dolling, 1972) is new to Britain.

DERAEOCORINAE - DERAEOCORINI:

Deraeocoris flavilinea (A. Costa, 1862) is new to Britain.

MIRINAE - MIRINI

Calocoris fulvomaculatus (DeGeer) is now *Closterotomus fulvomaculatus* (DeGeer, 1773)

Calocoris major (Schilling) is now *Calocoris alpestris* (Meyer-Dür, 1843)

Calocoris norvegicus (Gmelin) is now *Closterotomus norvegicus* (Gmelin, 1790)

Calocoris quadripunctatus (Villers) is now *Rhabdomiris striatellus striatellus* (Fabricius, 1794)

Calocoris sexguttatus (Fabricius) is now *Grypocoris (Lophyromiris) stysi* (Wagner, 1968)

Camptozygum pinastri (Fallén) is now *Camptozygum aequale* (Villiers, 1789)

Lygocoris lucorum (Meye-Dür) is now *Apolygus lucorum* (Meye-Dür, 1843)

Lygocoris spinolae (Meye-Dür) is now *Apolygus spinolae* (Meye-Dür, 1841)

Orthops basalis (A. Costa, 1853) is new to Britain

Orthops cervinus (Herrich-Schaeffer) is now *Pinalitus cervinus* (Herrich-Schaeffer, 1841)

Orthops kalmi (Linnaeus) is now *Orthops kalmii* (Linnaeus, 1758)

Orthops rubricatus (Fallén) is now *Pinalitus rubricatus* (Fallén, 1807)

Plesiocoris rugicollis (Fallén) is now *Lygocoris rugicollis* (Fallén, 1807)

Polymerus nigrinus (Fallén) is now *Polymerus nigrinus* (Fallén, 1807)

MIRINAE - STENODEMINI

Acertropis gimmerthali (Flor) is now *Acertropis gimmerthalii gimmerthalii* (Flor, 1860)
Pithanus maerkeli (Herrich-Schaeffer) is now *Pithanus maerkelii* (Herrich-Schaeffer, 1838)
Stenodema calcaratum (Fallén) is now *Stenodema (Brachystira) calcarata* (Fallén, 1807)
Stenodema holsatum (Fabricius) is now *Stenodema holsata* (Fabricius, 1787)
Stenodema laevigatum (Linnaeus) is now *Stenodema laevigata* (Linnaeus, 1758)
Stenodema trispinosum Reuter is now *Stenodema (Brachystira) trispinosa* Reuter, 1904

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A list of some British species and selected photographs can be viewed at: <https://www.britishbugs.org.uk/gallery.html>

Informative articles on British Heteroptera have been published in *Het News* and *The Hemipterist*, available at:

<https://www.britishbugs.org.uk/HetNews.html>
<https://sites.google.com/site/thehemipterist/>

Note – Currently there are no up to date published keys for the separation of dicyphine genera; definitive identification of most species is by dissection of the male genitalia. It should also be noted that the alien species *Nesidiocoris tenuis* (Reuter, 1895) and *Dicyphus hesperus* Knight, 1943 have been used in the biological control of tomato pests abroad; so far they have not been reported from Britain.

Notice: The Naturalist Editorial Board

This edition of *The Naturalist* sees significant changes to the Editorial Board when we say farewell to David Smith and Bill Ely. David has been a valuable asset since he joined in 2016 and Bill, who was present from the start of the new format *Naturalist* in 2011, played a key role in developing our current approach to editing the journal. We are extremely grateful for the time and effort they have both expended in this and, on behalf of the YNU, would like to extend to them our very grateful thanks. In their place we are very pleased to welcome two stalwarts of the YNU, Africa Gomez and Geoff Oxford.

Andy Millard

National Whale and Dolphin Watch events 2006 to 2021: A review of Yorkshire records

Colin A. Howes

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The origins of UK Cetacean Watching: Prior to the 1970s scientific knowledge of whales, dolphins and porpoises in British and Irish waters was derived almost entirely from the examination of dead animals that had been stranded ashore or from the results of commercial whaling activities. In 1973 the Mammal Society, under Dr. Peter Evans, set up its Cetacean Group with a view to the study and recording of living wild cetaceans.

To develop these aims by involving the public in scientific monitoring and in gathering information on conservation and animal welfare issues affecting UK cetaceans, the Sea Watch Foundation was established in 1991. This, a charity and a limited company, was the creation of Dr. Evans in association with Paul Vodden, who had been involved in animal welfare and conservation with the RSPCA, Greenpeace and the Whale and Dolphin Conservation Society. Information gathered over the next four decades by the Sea Watch Foundation through its network of regional coordinators and volunteer observers has become the primary source of knowledge about the changing status and distribution of cetaceans around the British Isles. The results are manifest in the new *Atlas of the Mammals of Great Britain and Northern Ireland* (Crawley *et al.*, 2020).

National Whale and Dolphin Watch (NWDW): This is one of the Foundation's most successful outreach initiatives, a Citizen Science exercise run annually since 2006. The coastlines of the United Kingdom are split into 35 recording areas, each with its regional co-ordinator. The coast from South Gare at the mouth of the Tees to Spurn at the mouth of the Humber constitutes recording areas 8 and 9 and equates with the coastal fringes of Yorkshire Vice Counties 62 and 61 respectively. Volunteers recording from coastal or offshore vantage points are co-ordinated by Stuart Baines of Scarborough (Email: scarboroughporpoise@btinternet.com). Volunteer recorders receive instructions on the identification and recording methodology from the Foundation's website and reports are submitted on impressively comprehensive recording sheets designed for either land-based or vessel-based observations. These record such data categories as length of observation period, location co-ordinates, time of sighting,

species, identification confidence, group size and composition, behaviour, heading direction, sea state, wind speed and direction and even associated seabirds. Volunteer contributions are acknowledged and results of the 2006 to 2019 events are reviewed on the Foundation's website (Internet reference 1) and for 2020 on Internet reference 2.

Observation Events take place in mid to high summer with dates ranging from 21 - 29 June in 2007 to 7-15 August in 2010. Raw data from the 2019, 2020 and 2021 events have been placed on the Foundation's website enabling the creation of tables 1, 2 and 3 (pp 48,49) respectively, showing the range of records from each named observation point.

A review of Yorkshire results:

Harbour Porpoise *Phocoena phocoena*. This is the most regularly reported species, encountered annually in the surveys, occurring singly or in small groups at most of the coastal observation points. North Yorkshire recorded one of the highest densities of sightings in the 2009 UK survey. A gathering of 20 off Flamborough Head was the largest group encountered during the 2015 UK survey and 26 in 2020, again off Flamborough, being the largest Yorkshire coast gathering encountered during any of the NWDW events.

Short-beaked Common Dolphin *Delphinus delphis*. A rarity in the North Sea and Yorkshire waters, the only recent records being one stranding at South Landing, Flamborough on 27 November 1977 (Howes, 2000) and a group of four seen off South Gare, Tees Mouth on 14 August 2016 and five on 29 October 2019 (Sea Watch Foundation database). The only specimens encountered locally during the NWDW surveys were two off Burniston on 4 August 2019.

White-beaked Dolphin *Lagenorhynchus albirostris*. Populations in the North Sea are largely in offshore Scottish waters extending south to the Northumberland and Durham coasts. NWDW events first encountered them off the Yorkshire coast in 2007, the local record representing one of just four UK sightings. This elegant dolphin was again sighted in the surveys of 2008, in 2011 when Whitby provided one of only two sightings in the UK survey, in 2013, in 2014 when Spurn provided the most southerly North Sea record and in 2019 when boat-based observations encountered five off Burniston, three off Scarborough and two off Bridlington. Within the decade large groups were sporadically extending south to Yorkshire waters, a pod estimated at about 100 was regularly seen by fishermen off Staithes in January 2013 (Hobbs & Webb, 2013b) and about 100 animals seen off Whitby, between 23 and 31 July 2016 represented the largest group encountered during the NWDW UK survey.

Bottlenose Dolphin *Tursiops truncatus*. Populations in the North Sea occur largely in Scottish waters extending south to the Northumberland and Durham coasts. A relative newcomer to the Yorkshire coast, NWDW events first encountered it in 2009 with a group of 11 sighted off Scarborough and one venturing south to Withernsea, these being regarded as notable highlights of the 2009 UK survey. Groups were encountered in 2015, 2016 and again in 2019 with 12 each off Filey Brigg and Flamborough Head and three as far south as Aldbrough. The largest gathering seen in Yorkshire waters was estimated at 40 individuals off Marske-by-the-sea on 2 August 2020.

Minke Whale *Balaenoptera acutorostrata*. By far the most frequent baleen whale entering the North Sea, its presence off the Yorkshire coast was largely known from a long history of

fatal strandings (Howes *et al.*, 1987). With the increasing popularity in sea watching and the availability of specialist whale-watching boat trips, sightings of individuals and small groups are frequently monitored through the summer months. They were first encountered during NWDW events in 2008, followed by sightings in nine years until 2021, including sightings at two sites in 2010, a group of seven in Robin Hood's Bay, which was the largest UK assemblage in the 2013 UK survey, and a group of four off Whitby in 2014. Later in the season groups estimated at ten have been claimed off Whitby from the whale-watching boat 'Specksioneer' on 26 September 2015, 5 and 23 September 2017 and off Port Mulgrave on 4 September 2019 (Sea Watch Foundation database).

Sei Whale *Balanoptera borealis*. One seen off Robin Hood's Bay on 27 July was regarded as one of the UK highlights during the 2013 survey. The specimen was present on the Yorkshire coast for several weeks, first seen off Filey Brigg on 16 July, photographed off Whitby during a whale-watching trip on 26 July and again seen off Whitby on 22 September. The recent history of this is interesting with a 32ft (9.8m) juvenile female stranding alive high up on vegetated saltings in the Humber estuary at Skeffling (TA3718) on a very high tide on 23 September 2011. This represented the 14th UK stranding since 1913 and 3rd autopsied stranding since 1990. Finally, two were seen off Whitby on 14 September 2014 and a singleton here on 27 September 2014 (Hobbs, 2014).

Fin Whale *Balenoptera physalus*. Prior to NWDW surveys and the advent of sea-watching and of whale-watching boat trips, the majority of Yorkshire Fin Whale records were of strandings and well-rotted carcasses. Recent examples, all within the Humber estuary, are one at the Wire Dump, Spurn on 17 December 2006 (Andrew Gibson pers. comm.), one at Barrow Haven on 29 October 2007 and one stranding alive off Immingham and finally dead on sandbanks at Cleethorpes on 8 September 2011 (*BDMLR News*. Internet ref. 5). Notable Fin Whale sightings during the 2015 UK survey included two off Whitby on 29 July.

Humpback Whale *Megaptera novaeangliae*. Since the first post 19th-century appearance in Yorkshire waters on 30 May 2004 (Howes, 2005), there have been regular encounters with this sensational creature from whale-watching boats off Whitby e.g. 18 to 21 Oct 2012 (Hobbs & Webb, 2012b); off Runswick Bay e.g. 25 July 2013 (Hobbs & Webb, 2013a), off Skinningrove e.g. 19 August 2012 (Hobbs & Webb, 2012a) and one 80 miles east of the Humber Estuary, seen from the Immingham to Cuxhaven ferry, 6 April 2014 (Hobbs & Webb, 2014). There have been in-shore, land-based sightings off Long Nab, Burniston e.g. 20 Nov. 2015 (Sea Watch Foundation database); Bempton e.g. 16 Sept. (*Hull Daily Mail* 16 Sept. 2019) and Spurn 20 Sept. 2010 (Spurn Warden, pers. comm.). Social groups have also been encountered with three off Filey Brigg 14 Nov. 2007 (Sea Watch Foundation database) and three to four, including a juvenile, off Whitby 6 to 14 Sept. 1914 (Hobbs, 2014).

The hazard to these baleen whales occurring in the shallow waters around the Yorkshire coast was sadly demonstrated in fatal strandings in 2006. A calf became trapped in the concrete and steel structure of the jetty at ferry terminal 1 in King George Dock, Hull on 21 September (*Yorkshire Post* 23 Sept. 2006) and a juvenile stranded in Runswick Bay 22 October (*Middlesbrough Gazette* 23 Oct. 2006; *Whitby Gazette*, 23 Oct. 2006). On the more shallowly shelving Dutch coastline fatal strandings have been even more frequent. Of five sightings around the UK during the 2018 NWDW survey one was photographed by Jo Symon on 30 July

feeding amongst a blizzard of diving Gannets *Morus bassanus* off Bempton Cliffs (see internet ref. 6).

Table 1: Locations and Species with range of numbers estimated 27 July to 4 August 2019 based on data in internet ref 3. Recording at 13 onshore and 10 offshore vantage points. 69 sighting reports were submitted

Locations of observation points (North to South)	Harbour Porpoise	Common Dolphin	Bottlenose Dolphin	White-beaked Dolphin	Minke Whale	Indet. cetacean
	Range of estimated numbers of individuals per sighting					
Offshore Middlesborough						1
Saltburn (NZ62)	4					
Offshore Whitby					1	
Staithes (Old Nab), (NZ7918)	1 to 2					
Off Robin Hood’s Bay	1					
Offshore Ravenscar					1	
Offshore Cloughton	1					
Cloughton Newlands (TA0295)	1		8			
Cloughton Wyke (TA0295)			7			3
Offshore Burniston		2		2 to 5		
Scarborough (Marine Drive) (TA0589)	1 to 3		6			
Scarborough (South Bay), (TA0590)	4					
Offshore Scarborough	1 to 3			3		
Filey Brigg (TA1381)			6 to 12			
Bempton Cliffs (TA1974)	1 to 3		4			
Flamborough Head (TA2570)	3		12			
Bridlington (TA1866)			6			
Offshore Bridlington	1		4	2		
Hornsea (Marine Hotel), (TA2048)	1					
Hornsea (South), (TA2147)	1 to 2					
Offshore Cowden (TA2342)					1	
Aldbrough (TA2539)			2 to 3			
Offshore Easington (TA4019)	1 to 2					

The 2020 event was monitored by 21 volunteers (acknowledged in Internet ref. 2) recording at 14 onshore vantage points but with no boat or other offshore recording. 75 sighting reports were submitted.

Table 2: Locations and Species with range of numbers estimated 26 July to 2 August 2020 based on data in Internet ref. 3.

Locations of observation points (North to South)	Range of estimated numbers of individuals per sighting		
	Harbour Porpoise	Bottlenose Dolphin	Minke Whale
South Gare (Tees mouth), (NZ5528)	2	25	
Marske-by-the-Sea (St Germain’s Churchyard), (NZ6422)	1	5 to 40	
Saltburn-by-the-Sea (Huntcliff), (NZ6821)		7 to 15	
Staithes (Cowbar weather station), (NZ7819)	2		1
Staithes (Old Nab), (NZ7918)	1 to 7		1
Kettleness (NZ8316)	2 to 3		
Saltwick (½ mile off wreck of the SS Rohilla), (NZ9111)			1
Burniston (Long Nab), (TA0293)	1 to 3		
Burniston (Cromer Point), (TA0392)	1 to 5		
Scarborough (Marine Drive), (TA0589)	1 to 2	5	
Bempton Cliffs (RSPB), (TA1974)	1 to 5	1 to 5	1
Flamborough Head (Foghorn Station), (TA2570)	1 to 26		1
Mableton (TA2243)	1		
Kilnsea/Spurn (TA4115)	1		

The 2021 event was monitored by 18 volunteers (acknowledged in Internet ref. 3) recording at 15 onshore vantage points. 57 sighting reports were submitted.

Table 3: Locations and Species with range of numbers estimated 24 July to 1 August 2021 based on data in internet reference 3.

Locations of observation points (North to South)	Range of estimated numbers of individuals per sighting		
	Harbour Porpoise	Bottlenose Dolphin	Minke Whale
South Gare (Tees mouth), (NZ5528)		4 to 7	1
Coatham (NZ5925)		7	
Redcar (NZ6125)		1	
Staithes (Old Nab), (NZ7918)	1 to 2		1
Runswick Bay (NZ8116)			1
Burniston (Long Nab) (TA0293)		3 to 5	
Scarborough (Marine Drive), (TA0589)	1	2 to 6	1
Scarborough (Harbour) (TA0588)		6	
Scarborough (Sea Cliff Road, (TA0486)	1	6 to 7	
Filey Brigg (TA1381)	3	5	
Filey Bay (TA1380)			2
Bempton Cliffs (RSPB, (TA1974)	1 to 3	1	1
Flamborough Head (TA2570)	1 to 3		1
Hornsea (South) (TA2147)	1		
Kilnsea, Yorkshire	1		

Acknowledgements

Thanks are due to all the observers, named in the Sea Watch Foundation database and respective internet references and particularly Stuart Baines the local Sea Watch Foundation coordinator.

Internet references:

- 1) https://www.seawatchfoundation.org.uk/wp-content/uploads/2021/03/NWDW-2020-Report_FINAL.pdf
- 2) https://www.seawatchfoundation.org.uk/wp-content/uploads/2022/01/NWDW-2021-Report_FINAL-2.pdf
- 3) <http://www.ywt.org.uk/news/2011/10/03/investigation-death-rare-whale>
- 4) <https://bdmlr.org.uk/about-bdmlr>
- 5) <https://www.seawatchfoundation.org.uk/wp-content/uploads/2018/08/18-07-30-Humpback-Dors-Fin-Jo-Symon.jpg>

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Yorkshire Ichneumons: Part 15

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Introduction

Yorkshire statuses are taken from the chart shown on the YNU website: www.ynu.org.uk/insects/parasitic_wasps

† = new county record

* = new vice-county record

Subfamily **PIMPLINAE**

Addition to Ely (2014a):

Perithous albicinctus (Gravenhorst, 1829). Rare in Yorkshire.

*VC62: Haxby 23.6.2020 T.J.Crawford.

Subfamily **BANCHINAE**

Addition to Ely (2018a):

Glypta (Conoblasta) fronticornis Gravenhorst, 1829. Scarce in Yorkshire.

*VC62: Jugger Beck, Fylingdales Moor 2.5.2016 G.Featherstone.

Lissonota (Campocineta) pleuralis Brischke, 1880 New to Yorkshire.

†VC63: Boston Park Lake, Hatfield Moors NNR 3-12 + 22.7-3.8.2022 J.O.H.Small.

Subfamily **CTENOPELMATINAE**

Addition to Ely (2018b):

Perilissus seminiger (Gravenhorst, 1829). Rare in Yorkshire.

*VC62: Haxby 26.6.2020 T.J.Crawford.

Perilissus stigmaticus Woldstedt, 1874. Scarce in Yorkshire.

*VC62: Haxby 21.5.2020 T.J.Crawford.

Mesoleius melanoleucus (Gravenhorst, 1829). Rare in Yorkshire.

*VC64: Near Wood, Askham Bog YWT NR. 2017 R.Crossley.

Subfamily **CAMPOPLEGINAE**

Addition to Ely (2019):

Dusona annexa (Förster, 1868). Scarce in Yorkshire.

*VC63: packhorse track, Salter's Bridge, Langsett Moors 4.7.2011 W.A.Ely.

Cymodusa cruentata (Gravenhorst, 1829). New to Yorkshire.

†VC63: Poor Piece, Hatfield Moors NNR 14-26.4.2022 J.O.H.Small.

Subfamily **TERSILOCHINAE**

Additions to Ely (2020a):

Phradis punctipleuris Horstmann, 1971. New to Yorkshire.

†VC63: Thorne Moors NNR canals 28.8-25.9.1987 W.A.Taylor.

Probles (Probles) erythrostomus (Gravenhorst, 1829). Rare in Yorkshire.

*VC61: Cali Heath YWT NR 13.6.2017 R.Crossley.

Tersilochus (Pectinolochus) heteroceras (Thomson, 1889). Scarce in Yorkshire.

*VC64: Kings Road, Bramhope 7.5.2020 S.G.Compton.

Subfamily **MESOCHORINAE**

Additions to Ely (2020b):

Astiphromma hirsutum (Bridgman, 1883). Rare in Yorkshire.

*VC63: Pot Riding Wood, Sprotborough Flash YWT NR 20.7.1988 W.A.Ely,

Astiphromma nigrocoxatum (Strobl, 1904). New to Yorkshire.

†VC64: Askham Bog YWT NR 13.5.2017 R.Crossley.

Subfamily **ORTHOCENTRINAE**

Additions to Ely (2020b):

Plectiscidea (Plectiscidea) canaliculata (Förster, 1871). Scarce in Yorkshire.

*VC53: Thorne Moors NNR canals 28.8-25.9.1987 W.A.Taylor.

Subfamily **ICHNEUMONINAE** (cont.)

Addition to Ely (2022):

Diphyus quadripunctorius (Muller, 1776). Scarce in Yorkshire.

*VC64: Askham Bog YWT NR 3.7.2020 T.J.Crawford

Tribe **Goedartini**

Goedartia alboguttata (Gravenhorst, 1829). Rare in Yorkshire.

Unconfirmed report from VC64 in Bairstow, Roebuck & Wilson (1882) p103; Morley (1903) p13; Roebuck (1907) p213

‡VC61: Wilson's Plantation, Limefield Farm, Stamford Bridge 8-15.7.2003 S.E.M.Fraser

*VC62: Terrace Bank Wood spur, Duncombe Park 18-29.7.2019 J.O.H.Small.

Tribe **Eurylabini**

Eurylabus torvus Wesmael, 1844. Rare in Yorkshire.

Reported from VC63 in Bateson (2002) p43.

*VC61: Three Hagges Jubilee Wood, Escrick Park 1.9.2016 A.Grayson.

*VC62: Skinningrove W of Kilton Beck 15.9.2012 W.A.Ely.

Eurylabus tristis (Gravenhorst, 1829). Rare in Yorkshire.

Reported from VC62 in Hincks & Dibb (1940) p174.

*VC61: Allerthorpe 14.9.1912 + 14.8.1922 W.J.Fordham (det. C.Morley)

*VC65: Thorpe Perrow Arboretum 17.7.1982 W.A.Ely.

Tribe **Listrodromini**

Listrodromus nycthemerus (Gravenhorst, 1820). Rare in Yorkshire.

Reported from VC63 in Gartside (2018b) p174.

Tribe **Zimmerini**

Coteheresiarches dirus (Wesmael, 1853)

Unconfirmed report from VC64 in Wilson (1881) p153; Fitch (1881) p138; Bairstow *et al.* (1882) p104; Morley (1903) p216 and Roebuck (1907) p213.

Tribe **Platylabini**

Pristericops infractorius (Linnaeus, 1761). Rare in Yorkshire.

Reported from VC61 in Fordham (1926) p117.

Platylabus heteromallus (Berthoumieu, 1910). Rare in Yorkshire.

Unconfirmed report from VC64 in Wilson (1881) p153; Bairstow *et al.* (1882) p104; Morley (1903) p224 and Roebuck (1907) p213. Reported from VC62 in Walsh & Rimington (1956) p275 and from VC63 in Denton (2017) p446.

*VC64 Fawcett Wood, Bolton-by Bowland 31.7.2011 W.A.Ely.

Platylabus intermedius Holmgren, 1871. Rare in Yorkshire.

‡VC64: Swinsty Moor Plantation 18.6.2011 D.Parkinson.

*VC65: Carperby Moor (SD9791/SD9993) 7.9.2016 C.H.Fletcher.

Platylabus iridipennis (Gravenhorst, 1829). Uncommon in Yorkshire.

Unconfirmed unlocalised report in Stevens (1935) p142 + 145. Reported from VC62 in Morley (1903) p224 and Roebuck (1907) p213, from VC63 in Hincks (1951) p27 and Denton (2017) p446, from VC65 in Ely (1987) p30 and from York in Morley (1903) p224.

Platylabus obator (Desvignes, 1856). Rare in Yorkshire.

Reported from VC62 in Flint (1989) p142.

*VC64: Quarry Hummocks, Hetchell Wood YWT NR 11.6.1988 W.A.Ely.

Platylabus odiosus Perkins, 1953. Rare in Yorkshire.

‡VC62: Ellerburn Bank YWT NR, Thornton-le-Dale 4-8.7.2011 P.J.Mayhew.

Platylabus orbitalis (Gravenhorst, 1829). Scarce in Yorkshire.

Reported from VC62 in Walsh & Rimington (1956) p275 and from VC63 in Skidmore, Limbert & Eversham (1987) p127; Skidmore (2006) p149.

*VC61: Skipwith 25.6.1923 W.J.Fordham (det. C.Morley).
 *VC65: King's Pit, Tan Hill 14.8.2011 W.A.Ely.

Platylabus pumilio Holmgren, 1871. Rare in Yorkshire.
 ‡VC62: Ruston Cliff Wood, Forge Valley 21.7.1979 W.A.Ely.
 *VC63: Tinsley SF 10.7.1987 J.P.Richards.
 *VC64: Hollins Hill, Baildon 1-4.9.2017 H.N.Whiteley.

Platylabus rufus Wesmael, 1844. Scarce in Yorkshire.
 Reported from VC62 in Walsh & Rimington (1956) p275 and from VC63 in Hincks (1951) p27.
 *VC61: Allerthorpe Common 6.1926 W.J.Fordham (det. G.J.Kerrich)
 *VC64: Ellington Banks Training Area 25.5.2011 C.H.Fletcher.
 *VC65: Freeholders' Wood, Aysgarth 9 + 11.6.2017 C.H.Fletcher.

Platylabus tricingulatus (Gravenhorst, 1820). Rare in Yorkshire.
 Reported from York in Hincks (1951) p27

Platylabus vibratorius (Thunberg, 1824). Rare in Yorkshire.
 ‡VC61: Allerthorpe ex pupa 13.9.1985 J.Payne.

Dentilabus variegatus (Wesmael, 1844). Rare in Yorkshire.
 ‡VC62: Scarborough 6.1926 CET.
 *VC63: Tinsley Park 2.6.1989 A.Brackenbury.
 *VC64: Copmanthorpe Wood 3-10.6.2003 S.E.M.Fraser.
 *VC65: Deepdale NR, Barnard Castle 7.9.2021 R.Wilson.

Asthenolabus vitratorius (Gravenhorst, 1829). Rare in Yorkshire.
 Reported from VC61 in Hincks (1951) p27.
 *VC62: Race Lane, Pilmoor 2.9.2011 W.A.Ely.
 *VC63: Rushy Moor ex pupa 22.3.1986 J.Payne.
 *VC64: Askham Bog YWT NR 29.7.2014 R.Crossley.

Cyclolabus dubiosus Perkins, 1953. Scarce in Yorkshire.
 ‡VC61: Bolton ex *Eupithecia scabiosata* em 1891 Bedwell (det. J.F.Perkins).
 *VC62: Rutmoor Beck, Wheeldale Moor 13.8.2013 R.Crossley.
 *VC63: Agden valley 30.7.1973 W.Davison.
 *VC64: Blubberhouses Moor 21.8.2011 A.R.Godfrey.

Cyclolabus nigricollis (Wesmael, 1845). Scarce in Yorkshire.
 Unconfirmed report from VC62 in Walsh & Rimington (1956) p275. Reported from VC64 in Ely (2012a) p224.
 *VC63: Pebleygrove 21.8.2011 W.A.Ely.

Cyclolabus pactor (Wesmael, 1845). Rare in Yorkshire.
 Reported from VC63 in Hincks (1951) p27.

Linycus exhortator (Fabricius, 1787). Rare in Yorkshire.
 Reported from VC63 in Hincks (1951) p27 and from VC64 in Hincks (1951) p27 and Parkinson (2015) p17.

Hypomecus quadriannulatus (Gravenhorst, 1829). Rare in Yorkshire.
 Unconfirmed report from VC62 in Roebuck (1877) p37, (1907) p213. Reported from VC63 in Ely (2012b) p236.
 *VC61: West End Farm, Muston 28.9.2011 W.A.Ely.
 *VC62: East Row Plantation, Mulgrave Woods 15.9.1990 W.A.Ely.
 *VC64: Hollins Hill, Baildon 19-28.10.2018 H.N.Whiteley.
 *VC65: Colsterdale 30 + 31.8.1980 W.A.Ely.

Apaeleticus bellicosus Wesmael, 1844. Rare in Yorkshire.
 Reported from VC61 [as *Platylabus neglectus*] in Fordham (1931b) p356 and from VC63 in Ely (2014c) p46.

*VC64: Greenland Wood, Copmanthorpe 4-11.9.2003 S.E.M.Fraser.

Tribe **Phaeogenini**

Heterischnus nigricollis (Wesmael, 1845). Rare in Yorkshire.

Reported from VC61 in Ely (1986a) p103 and Key (1987a) p221, from VC63 in Ely (1991) p148 and from VC64 in Ely (2011a) p215.

*VC62: Malton Road, York 3.9.1943 A.Smith.

Heterischnus truncator (Fabricius, 1798). Scarce in Yorkshire.

Reported from VC63 in Newbould (1985) p8.

*VC61: Rush Wood, Naburn 11-18.9.2003 S.E.M.Fraser.

*VC62: St Nick's NR, Layerthorpe, York 10.8.2020 J.Thomas.

*VC64: Bond Ing, Old Gate Lane, Shadwell 16.11.2013 T.M.Whitaker.

Misetus oculatus Wesmael, 1845. Rare in Yorkshire.

†VC61: New Drive Plantation, Melbourne 3-10.6.2003 S.E.M.Fraser.

Trachyarus corvinus Thomson, 1891. Rare in Yorkshire.

Reported from VC64 in Parkinson (2015) p16 .

*VC61: Wigman Wood, Wheldrake 1-8.7.2003 S.E.M.Fraser.

Nematomicrus tenellus Wesmael, 1845. Scarce in Yorkshire.

Reported from VC64 in Ely (1986a) p101 and Key (1987a) p218,375.

*VC61: Fox Covert, Escrick Park 4-11.9.2003 S.E.M.Fraser.

*VC62: Garbutt Wood YWT NR 13.9.1981 W.A.Ely.

*VC63: Dyscarr Wood 13.6.1985 W.A.Ely.

*VC65: Richmond 8-9.1899 SE (det. C.Morley, J.F.Perkins).

Stenodontus marginellus (Gravenhorst, 1829). Rare in Yorkshire.

Reported from VC65 in Ely (1987) p30-1.

*VC62: Skinningrove 3.9.2011 R.S.&R.Key.

*VC63: Don Island W of Centenary Way 22.7.2006 W.A.Ely.

Eriplatys ardeicollis (Wesmael, 1845). Rare in Yorkshire.

†VC61: Malton & Norton GC 2.9.2013 W.A.Ely.

Herpestomus arridens (Gravenhorst, 1829). Rare in Yorkshire.

†VC65: Oxnop Gill 5.10.1985 I.F.G.McLean.

Herpestomus brunnicornis (Gravenhorst, 1829). Rare in Yorkshire.

Unconfirmed report from VC63 in Coldwell (1999) p63 and Ely (2014c) p40.

*VC62: Rosedale ex *Yponomeuta euonymella* 7-8.1985 D.H.Smith.

*VC64: Becca Banks, Aberford 26.5.1984 W.A.Ely.

Herpestomus nasutus Wesmael, 1844. Rare in Yorkshire.

Reported from VC63 in Ely (2014c) p46.

*VC64: Hollins Hill, Baildon 25-27.8.2017 H.N.Whiteley.

Herpestomus wesmaeli Perkins, 1953. Rare in Yorkshire.

†VC63: Campsall 13.7.1976 P.Skidmore.

Dilleritomus filiformis (Strobl, 1901). Rare in Yorkshire.

†VC63: Packard's South, Hatfield Moor 16.9.2021 J.O.H.Small.

Dicaelotus cameroni Bridgman, 1881

Unconfirmed report from VC62 in Hincks (1943a) p57.

Dicaelotus erythrostoma Wesmael, 1845. Rare in Yorkshire.

†VC63: St Ives, Bingley 10.5.1947 J.Wood.

Dicaelotus parvulus (Gravenhorst, 1829). Rare in Yorkshire.

Reported from VC64 in Wilson (1882) p109 and Roebuck (1907) p213.

Dicaelotus pumilus (Gravenhorst, 1829). Scarce in Yorkshire.

Unconfirmed reports from VC62 in Roebuck (1877) p37 and from VC62 and VC64 in Morley (1903) p275 and Roebuck (1907) p213. Reported from VC65 in Ely (1987) p30-1.

*VC61: Skipwith Common 22.8.1916 W.J.Fordham (det. C.Morley).

*VC62: Forge Valley 13.9.1928 G.B.Walsh.

*VC63: Blacktoft Sands RSPB NR 7.1979 + 6.1980 A.Grieve.

Dicaelotus pusillator (Gravenhorst, 1807)

Unconfirmed report from VC62 in Roebuck (1877) p37; Morley (1903) p278 and Roebuck (1907) p214.

Dicaelotus pusillus Holmgren, 1890. Rare in Yorkshire.

†VC63: Blacktoft Sands RSPB NR 9.1979 A.Grieve.

Dicaelotus rufoniger Berthoumieu, 1896. Rare in Yorkshire.

Reported from VC61 in Fordham (1919) p70 and Hincks (1943a) p57 [as *D. cameroni*].

*VC63: Holmehouse Wood 11.8.1930 J.Wood (W.A.Ely)

*VC65: Oxnop Gill 5.10.1985 I.F.G.McLean.

Epitomus infuscatus (Gravenhorst, 1829). Uncommon in Yorkshire.

Unconfirmed report from VC62 in Morley (1903) p275; Roebuck (1907) p213.

*VC61: Land of Nod, Holme-on-Spalding Moor 5.7.1981 W.A.Ely.

*VC62: Beast Cliff 6.9.1986 W.A.Ely.

†VC63: St Ives, Bingley 17.8.1946 J.Wood.

*VC65: Thorpe Perrow Arboretum 17.7.1982 W.A.Ely.

Epitomus proximus Perkins, 1953. Rare in Yorkshire.

*VC62: Castlebeck Wood Woodland Trust NR, Harwood Dale 7.9.1986 W.A.Ely.

*VC63: Brecks Plantation, Listerdale 5.5.1985 W.A.Ely.

†VC64: Harrogate 13.9.1961 [E.Broadhead].

Mevesia arguta (Wesmael, 1844). Scarce in Yorkshire.

Reported from VC62 in Walsh & Rimington (1956) p275.

*VC61: Allerthorpe Common, FC land E of Common Lane 5.8.1989 W.A.Ely.

*VC63: Silverwood, Ravenfield Common 4.5.1977 J.E.Addey, P.G.Stenton.

*VC64: Ash Wood, Drax 27.7.1987 W.A.Ely.

Diadromus arrisor Wesmael, 1845. Rare in Yorkshire.

Reported from VC63 in Ely (2014c) p46.

Diadromus candidatus (Gravenhorst, 1829). Rare in Yorkshire.

Unconfirmed report from VC64 in Bairstow *et al* (1882) p104, Morley (1903) p267 and Roebuck (1907) p213

*VC61: Church Lane, Catwick 25.7.2011 W.A.Ely.

†VC63: Cuthbright Wood, Loscar Common 6.9.1984 W.A.Ely

Diadromus collaris (Gravenhorst, 1829). Uncommon in Yorkshire.

*VC61: Wilson's Plantation, Limefield Farm, Stamford Bridge 8-15.7.2003 S.E.M.Fraser.

†VC62: Malton Road, York 14.5.1944 J.H.Elliott.

*VC63: Anston Stones Wood 17.10.1989 W.A.Ely.

*VC64: Willow Wood, Staveley YWT NR 6.10.2013 W.A.Ely.

*VC65: N edge of Hag Wood NT 20.6.2014 W.A.Ely.

Diadromus subtilicornis (Gravenhorst, 1829). Rare in Yorkshire.

Reported from VC62 in Walsh & Rimington (1956) p275.

*VC61: East Cottingwith Ings, Lower Derwent Valley NNR 12-19.4.2019 J.O.H.Small.

*VC65: Tarmac Nosterfield gravel pits 19.7.2018 P.W.H.&S.Flint.

Diadromus troglodytes (Gravenhorst, 1829). Uncommon in Yorkshire.

Reported from VC62 in Walsh & Rimington (1956) p275 and from VC63 in Coldwell (1999) p61, Shaw & Ely (1986) p14 and Denton (2017) p446.

- *VC61: Rush Wood, Naburn 10-17.6 + 5-12.8.2003 S.E.M.Fraser.
 *VC64: Bingley 5.7.1941 J.Wood.
 *VC65: Birk Gill Wood, Colsterdale 31.8.1980 W.A.Ely.
- Diadromus varicolor*** Wesmael, 1844. Rare in Yorkshire.
 Reported from VC63 in Ely (2014c) p46.
 *VC64: Hollins Hill, Baildon 17-24.7.2015 H.N.Whiteley.
- Eparces grandiceps*** (Thomson, 1891). Rare in Yorkshire.
 *VC61: Cali Heath YWT NR 17.6.2020 R.Crossley.
 †VC63: Hatfield Moor NNR 22.5 + 29.9.1992 P.Skidmore.
- Colpognathus celerator*** (Gravenhorst, 1807). Rare in Yorkshire.
 *VC61: Stork Hill wood, Tickton 23.8.2019 W.R.Dolling.
 †VC63: Woodland Road, Mirfield 10.9.2015 J.Flanaghan.
- Colpognathus divisus*** Thomson, 1891. Rare in Yorkshire.
 Reported from VC63 in Key (1986) p104, Maude (1988) p13 and Denton (2017) p447.
 *VC64: Swinsty Reservoir 12.5.1979 W.A.Ely.
- Centeterus confector*** (Gravenhorst, 1829). Scarce in Yorkshire.
 Reported from VC65 in Ely (2014b) p233.
 *VC61: Beverly Clump 25.7.2011 W.A.Ely.
 *VC63: Maltby Low Common YWT NR 9.7.1989 W.A.Ely.
 *VC64: Near Wood, Askham Bog YWT NR 23.6.2015 R.Crossley.
- Centeterus rubiginosus*** (Gmelin, 1790). Scarce in Yorkshire.
 Reported from VC64 in Ely (2014d) p228.
 *VC61: Hagg Wood, Dunnington 26.8.2015 R.Crossley.
 *VC62: Beast Cliff 6.9.1986 W.A.Ely.
 *VC63: Broadhead Clough YWT NR 4.9.1983 W.A.Ely.
 *VC65: Colsterdale 7.7.1984 W.A.Ely.
- Oiorhinus pallipalpis*** Wesmael, 1844. Common in Yorkshire.
 Reported from VC65 in Ely (1987) p30-1, (1988) p162.
 *VC61: Grimston Wood, Clock Farm, Dunnington Common 8-15.7.2003 S.E.M.Fraser.
 *VC62: Buttercrambe Woods 10.5.1944 J.H.Elliott.
 *VC63: Herringthorpe Wood 2.9.1981 W.A.Ely.
 *VC64: Constitution Hill, Studley Royal Park 15.9.1984 W.A.Ely.
- Aethecerus discolor*** Wesmael, 1845. Rare in Yorkshire.
 †VC63: Burghwallis 13.7.1976 P.Skidmore.
 *VC65: Gunnerside, Swaledale 5.10.1985 I.F.G.McLean.
- Aethecerus dispar*** Wesmael, 1844. Scarce in Yorkshire.
 Reported from VC62 in Walsh & Rimington (1956) p275.
 *VC61: Allerthorpe Common, FC land E of Common Lane 5.8.1989 W.A.Ely.
 *VC63: Lindrick GC 21.7.1986 S.J.Hayhow
 *VC64: Wood Hall 14.7.1944 W.D.Hincks
- Aethecerus longulus*** Wesmael, 1845. Rare in Yorkshire.
 †VC61: Filey CP plantation 13.8.2014 W.A.Ely.
- Aethecerus nitidus*** Wesmael, 1844. Scarce in Yorkshire.
 *VC61: Church Lane, Atwick 25.8.2011 W.A.Ely.
 †VC62: Stockton Hermitage 5.11.1951 J.H.Elliott.
 *VC63: March Haigh Reservoir 6.5.1985 D.Maude.
 *VC64: Seavy Carr Wood, Stutton 26.5.1984 W.A.Ely.
 *VC65: Wath Urn Bridge, Aldbrough St John 3.9.2012 W.A.Ely.
- Aethecerus placidus*** Wesmael, 1845. Rare in Yorkshire.

VC64: wetland N of Carr Dyke W of Drax ash tip 29.7.1987 W.A.Ely.
†VC65: Birk Gill, Colsterdale 2.9.1984 W.A.Ely.

Aethecerus porcellus Holmgren, 1890. Rare in Yorkshire.
†VC63: Holmehouse Wood 22.7 + 23.8 + 4.10.1942 J.Wood (det. E.Diller)
*VC64: Malham Tarn Fen NT 5.2013 P.W.H.Flint,S.Flint.

Dirophanes callopus Wesmael, 1844. Scarce in Yorkshire.
†VC61: Skipwith Back Common NNR 8.9.1916 W.J.Fordham.
*VC62: Garbutt Wood YWT NR 13.9.1981 W.A.Ely.
*VC63: Keighley 27.7.1918 R.Butterfield.
*VC64: wetland N of Carr Dyke W of Drax ash tip 29.7.1987 W.A.Ely.

Dirophanes foveolatus Perkins, 1953. Rare in Yorkshire.
Reported from VC63 in Ely (2014c) p46.

Dirophanes fulvitaris (Wesmael, 1844). Scarce in Yorkshire.
Reported from VC62 and VC64 in Morley (1903) p259,263 and Roebuck (1907) p214 and also from VC64 in Butterfield (1908) p71.
*VC63: Holmehouse Wood 19.9.1926 + 17.9.1932 J.Wood.

Dirophanes invisor (Thunberg, 1822). Scarce in Yorkshire.
Reported from VC62 in Walsh & Rimington (1956) p275 and from VC64 in Butterfield (1908) p71.
*VC63: Harden Moor 11.8.1918 R.Butterfield.

Dirophanes maculicornis (Stephens, 1835). Rare in Yorkshire.
Unconfirmed report from VC61 in Fordham (1919) p70. Reported from VC64 in Ely (1986a) p101 and Key (1987b) p218, 375.
*VC62: Mulgrave Woods 6.5.1935 H.Britten (det. J.F.Perkins).
*VC63: Holmehouse Wood 10.10.1937 J.Wood (det. E.Diller).
*VC65: Ravensworth 23.2.1924 W.J.Fordham.

Dirophanes mysticus (Wesmael, 1855).
Unconfirmed report from VC64 in Morley (1903) p259 and Roebuck (1907) p214.

Dirophanes regenerator (Fabricius, 1804. Scarce in Yorkshire.
*VC61: Wolds Way E of Burgate 5.9.2013 W.A.Ely.
*VC62: Strensall brickponds 6.10.1951 J.H.Elliott (det. E.Diller).
†VC63: Holmehouse Wood 25.10.1942 J.Wood.
*VC64: Malham Tarn NT 13.9.1957 W.D.Hincks (det. E.Diller).
*VC65: Witton Fell 10 + 24.9.1963 [E.Broadhead].

Tycherus bellicornis (Wesmael, 1844). Rare in Yorkshire.
Unconfirmed report from VC61 in Fordham (1919) p16, (1940) p(xi). Reported from VC65 in Newbould *et al.* (2013) p57.
*VC62: Strensall Common 13.8.1949 J.Wood.
*VC63: Pennyholme Marsh, Kiveton Park 31.5.1981 W.A.Ely.
*VC64: Hollins Hill, Baildon 8.2013 H.N.Whiteley.

Tycherus coriaceus (Perkins, 1953). Rare in Yorkshire.
Reported from VC63 in Ely (2014c) p46.
*VC64: Copmanthorpe Wood 29.7-13.8.2004 S.E.M.Fraser.

Tycherus elongatus (Thomson, 1891). Rare in Yorkshire.
Reported from VC63 in Ely (2014c) p46.
*VC61: East Clough, North Ferriby 21.4.2015 R.Crossley.

Tycherus flavidens (Wesmael, 1844). Scarce in Yorkshire.
†VC61: Allerthorpe Common, FC land E of Common Lane 5.8.1989 W.A.Ely.
*VC62: Ruston Cliff Wood, Forge Valley 6.9.1986 D.A.Shepherd.
†VC63: St Ives, Bingley 17.11.1943 W.D.Hincks.

*VC64: Harrogate 13.9.1961 + 31.8.1963 [E.Broadhead].
Tycherus fuscicornis (Wesmael, 1844). Uncommon in Yorkshire.
 Reported from VC62 in Payne (1986) p98 and Key (1987a) p234 and from VC63 in Denton (2017) p447.
 *VC61: Allerthorpe Common, FC land E of Common Lane 5.8.1989 W.A.Ely.
 *VC64: Gargrave 5.1907 R.Butterfield
 *VC65: Holywell Lane, North Cowton 10.6.2012 W.A.Ely.
Tycherus impiger (Wesmael, 1845). Rare in Yorkshire.
 *VC61: Allerthorpe Common YWT NR 1.7.1984 W.A.Ely.
 †VC64: Askham Bog YWT NR 27.5.1944 W.D.Hincks.
Tycherus infimus (Wesmael, 1844). Rare in Yorkshire.
 †VC63: Wilsden 1914 R.Butterfield.
 *VC64: Malham Tarn NT 15.9.1957 W.D.Hincks.
Tycherus ischiomelinus (Gravenhorst, 1829). Scarce in Yorkshire.
 Unconfirmed report from VC62 in Roebuck (1877) p37, Morley (1903) p256 and Roebuck (1907) p214.
 *VC62: Stockton Hermitage 5.10.1951 J.H.Elliott.
 *VC63: Holmehouse Wood 13.9.1941 + 4.10.1942 J.Wood.
 †VC64: Grassington 18.9.1918 R.Butterfield.
 *VC65: Masham 30.8.1980 W.A.Ely.
Tycherus ophthalmicus (Wesmael, 1845). Rare in Yorkshire.
 Reported from VC65 in Ely (2011b) p222.
 *VC61: Atwick Road, Bewholme 19.8.2013 W.A.Ely.
 *VC63: Sinking Wood, Huddersfield 18.6.1985 D.Maude.
Tycherus osculator (Thunberg, 1822). Scarce in Yorkshire.
 Reported from VC63 in Denton (2017) p447 and from VC65 in Ely (1987) p30-1.
 *VC61: Wilson's Plantation, Stamford Bridge 8-15.7.2003 S.E.M.Fraser.
 *VC62: Appleton Mill Farm 25.5.1985 G.King.
 *VC64: Malham Tarn NT 15.9.1957 W.D.Hincks.
Tycherus stipator (Wesmael, 1855). Rare in Yorkshire.
 †VC63: Magna, Templeborough 28.8.2002 W.A.Ely.
 *VC64: Adel Dam YWT NR 29.9.2011 L.Bernardova.
 *VC65: Hunters Stone Bank, Coverdale 9.9.2012 W.A.Ely.
Tycherus suspicax (Wesmael, 1844). Frequent in Yorkshire.
 Reported from VC64 in Hincks (1953) p37 and from VC65 in Ely (1987) p30-1
 *VC61: Many Gates Plantation, Stamford Bridge 1-8.7.2003 S.E.M.Fraser.
 *VC62: Ashberry Pastures YWT NR 15.6.1977 P.Skidmore.
 *VC63: Fan Field Farm, Lindrick 13.9.1980 W.A.Ely.
Phaeogenes curator (Thunberg, 1824). Rare in Yorkshire.
 †VC63: Newsholme Dene 29.8 + 14.9.1948 J.Wood.
Phaeogenes nigridentis Wesmael, 1844. Scarce in Yorkshire.
 Unconfirmed report from VC64 in Roebuck (1907) p214. Reported from VC65 in Newbould *et al.* (2013) p57.
 *VC61: Longborough Avenue, Shiptonthorpe 5.9.2013 W.A.Ely.
 *VC62: Ruston Cliff Wood, Forge Valley 5.9.1986 W.A.Ely (det. E.Diller).
 †VC63: Hartley Brook Dike, Ecclesfield 2.9.1978 A.Brackenbury (det. E.Diller).
 *VC64: Hollins Hill, Baildon 7.2013 H.N.Whiteley.
Phaeogenes planifrons Wesmael, 1845.
 Unconfirmed report from VC62 in Roebuck (1877) p37, Morley (1903) p251 and Roebuck (1907)

p214.
Phaeogenes semivulpinus (Gravenhorst, 1829). Rare in Yorkshire.
 Unconfirmed report from VC64 in Roebuck (1907) p214. Reported from VC65 in Ely (1987a) p30-1.
 *VC61: Stork Hill wood, Tickton 13.8.2017 W.R.Dolling.
 *VC62: Stockton Hermitage 5.10.1951 J.H.Elliott.

The YNU records of Ichneumoninae have been compiled as follows:

Decade	Species	Records	Records/Species	Collectors
1830-1839	2	2	1.0	1
1860-1869	18	18	1.0	1
1870-1879	20	30	1.5	7
1880-1889	20	21	1.0	3
1890-1899	20	21	1.0	12
1900-1909	29	43	1.5	8
1910-1919	48	88	1.8	18
1920-1929	67	195	3.0	9
1930-1939	54	124	2.5	14
1940-1949	80	237	3.0	8
1950-1959	39	72	1.8	6
1960-1969	19	24	1.3	7
1970-1979	64	150	2.3	27
1980-1989	120	619	5.1	41
1990-1999	72	191	2.7	23
2000-2009	72	189	2.7	15
2010-2019	126	777	6.0	55
2020-2022	36	63	1.6	16

Subfamily **ALOMYINAE**

Alomya debellator (Fabricius, 1775). Common in Yorkshire.
 Reported from VC61 in Hincks & Dibb (1940) p174, Hincks (1941) p160, Ely (1986b) p103 and Key (1987a) p221, from VC62 in Hincks (1943c) p122, (1945d) p141, (1946b) p148 and Walsh & Rimington (1956) p275, from VC63 in Hincks & Dibb (1940) p174, Hincks (1949) p162, Coldwell (1999) p63 and Ely (2014c) p40 and from VC64 in Hincks & Dibb (1940) p174, Hincks (1941) p246, (1943b) p91 and Key (1987b) p384.
 *VC65: Marske, Swaledale 6.6.1981 W.A.Ely.

Alomya semiflava Brischke, 1880. Scarce in Yorkshire.
 *VC62: Skinningrove W of Kilton Beck 15.9.2012 W.A.Ely.
 †VC63: Holmehouse Wood 10.6.1927 J.Wood.
 *VC64: Askham Bog YWT NR 30.8 + 1.9.1950 J.H.Elliott.
 *VC65: Leyburn Shawl 4.10.1985 W.A.Ely.

The YNU records of Alomyinae have been compiled as follows:

Decade	Species	Records	Records/Species	Collectors
1880-1889	1	2	2.0	2
1890-1899	1	2	2.0	2
1910-1919	1	16	16.0	3
1920-1929	2	13	6.5	3
1930-1939	2	25	12.5	6
1940-1949	2	27	13.5	4
1950-1959	2	8	4.0	3
1960-1969	1	1	1.0	2
1970-1979	2	10	5.0	9
1980-1989	2	27	13.5	11
1990-1999	1	7	7.0	6
2000-2009	2	2	1.0	2
2010-2019	2	22	11.0	10
2020-2022	1	2	2.0	2

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Ephemera associated with the Yorkshire Naturalists' Union

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I thought readers might be interested in seeing an original envelope used by the Yorkshire Naturalists' Union (YNU) for sending out details of its excursion programme. This delightful piece of ephemera, franked 20 September 1889, is addressed to the Société Royale Malacologique de Belgique in Brussels. I recently purchased the item on ebay, from a seller in The Netherlands. Wm Denison Roebuck's address is shown as 259 Hyde Park Road, Leeds. See Figures 1 and 2.

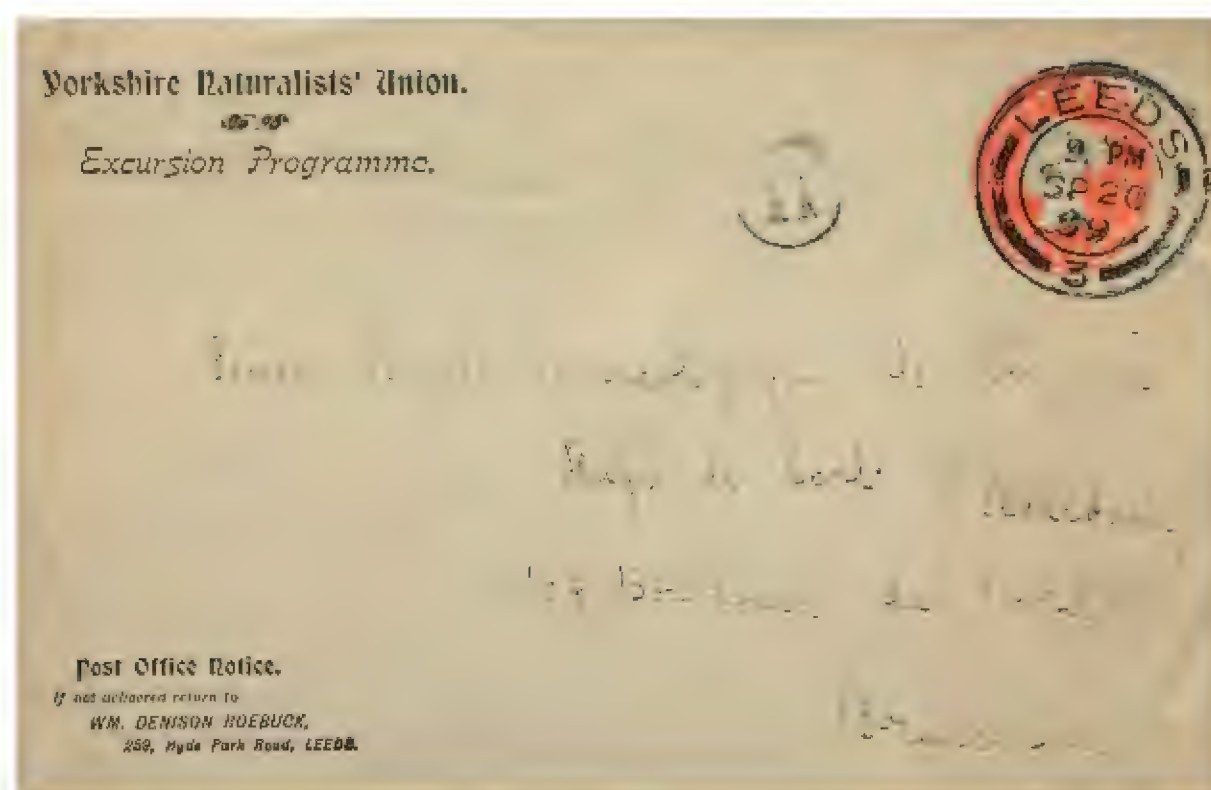


Figure 1. Envelope used for sending out Yorkshire Naturalists' Union excursion programmes in 1889.

By coincidence, I also possess a handwritten *With Compliments* slip from Roebuck, showing his address as Sunny Bank, Leeds, dated 28 January 1879. The *With Compliments* slip is attached to the inside front cover of an offprint of Roebuck's report on the state of knowledge and first list of species of Yorkshire Hymenoptera, published in Part 1 of the YNU *Transactions* (1878). The recipient was Robert Cook (1806-82), a York entomologist who provided records for Roebuck. Cook's equally delightful bookplate is also shown here (below).



Figure 2. the reverse of the Yorkshire Naturalists' Union envelope. The Latin phrase broadly translates to 'the white rose is the flower of flowers'.

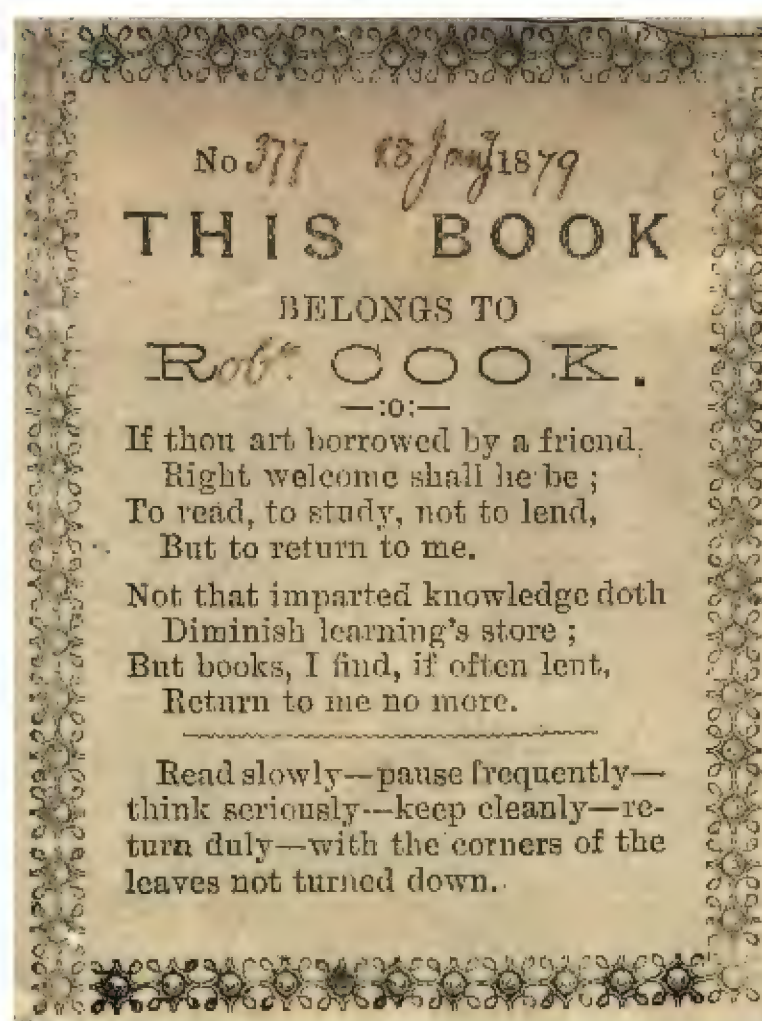


Figure 3. Robert Cook's bookplate.

YNU Excursions 2023

Circular No. 925

Divisional Secretary VC64 (Acting): Dr. Terry Whitaker, 4 Crowtrees, Low Bentham, Lancaster, LA2 7EE. Tel: 015242 62269 E-mail: t.whitaker1@btinternet.com

The VC64 Meeting will be held on Saturday 27th May at 10.30 in the area of Hell Wath L.N.R.

Meeting Place: at SE300699 at the entrance to the sports fields half way along Hell Wath Lane. Accessed via Whitcliffe Lane HG4 2JN. Roadside parking at the sides of Hell Wath Lane nr SE300699 near the Sports Ground.

Tea and Meeting: This will be at 4pm in the red brick ‘Pavillion’ at the playing fields. There will be a modest charge for tea. There are toilet facilities.

The area: At one time Hell Wath was part of the vast estate owned by the Vyner family, the last private owners of Fountains Abbey and Studley Royal before it passed into public ownership in 1966. Archival material points to a relatively unbroken continuity of agricultural use since the 18th century. Lease agreements indicate that the land was used as pastureland for grazing cattle. During WWII Hell Wath and parts of its surroundings became one of the largest army camps in the country, at its height accommodating about 30,000 soldiers. It was later used to repatriate returning prisoners of war. Some infrastructure foundations are still visible, most notably at the northern end, an unimpressive flight of crumbling concrete steps adjacent to the River Skell, curiously known as ‘The Fairy Steps’. These steps were constructed by the Army at the north-eastern end of the site and have a shallow channel on one side designed to ensure that the wheels of horse-drawn ammunition carts did not slip off the side. The camp was finally dismantled in the 1950s and the site became an important open space for Ripon residents.

When Redlands Aggregates Limited proposed excavating sand and gravel in the late 1970s, the site being adjacent to their Whitcliffe Sand & Gravel Quarry to the northeast, it was saved as a result of protests from the local community. However much adjoining brownfield was developed into housing. Currently Hell Wath is a public access area on the southwest side of Ripon, comprising two playing fields, two hay meadows, woodland and various areas of rather degraded grassland interspersed with tree copses and hedgerows. Part of the site (8.88 ha adjoining the River Skell) is designated as a Local Nature Reserve (LNR). It forms a green link bordered on its western side by the River Skell between the historic city of Ripon and the UNESCO World Heritage Site of Fountains Abbey & Studley Royal. Currently the LNR is managed by the charity *Friends of Hell Wath*. From 2022 work began on the LNR to restore degraded habitats as part of the £2.5m four-year Skell Valley Project, a scheme co-led by the National Trust and Nidderdale AONB and supported by The National Lottery Heritage Fund.

Geology: The River Skell currently flows through a U-shaped glacial valley, carved out during the last glaciation, and runs from the edges of Pately Moor to the River Ure in Ripon. Its headwaters are on the millstone grit and above the grit is a Permian unit of thinly-bedded Magnesian Limestone. These dolomitic rocks were deposited in a shallow marine environment. Much of this valley is covered by glacial deposits but the river is tiny compared to the valley it flows through. It is a ‘misfit’ stream. As the river flows east it cuts through progressively younger rocks until it reaches the present River Ure just to the east of the city. The Ure is another misfit stream whose antecedent, the much larger proto-Ure, cut through the bedrock during the Pleistocene, to a depth of about 30m below the present floodplain. This trough between the Magnesian Limestone and the New red sandstone, further east, is filled by Quaternary deposits comprising till (boulder clay), sands and gravels. Buried gypsum has resulted in Ripon having the worst gypsum-related subsidence in England, mainly in a zone alongside the buried proto-Ure trough. Much of the western area is underlain by the Magnesian Limestone which has been quarried in several places for use in the production of refractory bricks but also for aggregate for road-building and other construction purposes. It can be used in the production of agricultural lime but this type of creamy yellow limestone was used for statues and monumental masonry because of its better resistance to acid.

Habitats: The main rural habitats in the area are grassland, hedges, tree lines and small woods. Some of Hell Wath was semi-improved neutral grassland, originally moderately wildflower rich and structurally fairly diverse and tussocky in parts, with a range of common grasses. It is home to species such as Mouse-ear *Cerastium glomeratus*, Bush Vetch *Vicia sepium*, Common Spotted-orchid *Dactylorhiza maculata* and Cowslip *Primula veris* as well some rarer plants such as Adder's-tongue Fern *Ophioglossum vulgatum* and Bee Orchid *Ophrys apifera*. Unfortunately overuse, especially by dogwalkers, has greatly compromised the sward and resulted in very wide muddy thoroughfares. Scrub is also spreading across the open grasslands and is swamping the wildflowers and reducing resources for insects. Local residents voiced strong objections over a borough council plan to enclose the meadows and re-introduce grazing animals. The management plans were changed but the proposed annual cutting and removal regime was only partially implemented. The best habitat is a fringe of mature woodland alongside the River Skell. It has a good variety of tree species and the typical understorey includes Butterbur *Petasites hybridus*, Pendulous Sedge *Carex pendula*, Wood Anemone *Anemone nemorosa*, and Sweet Violet *Viola odorata*.

A small site of Yellow Star-of-Bethlehem *Gagea lutea* exists but Himalayan Balsam *Impatiens glandulifera* is present in large parts of the site. Most of the hedges have a wide, herb-rich base with a wide variety of species present including Lungwort *Pulmonaria officinalis*. The River Skell offers a range of riparian habitats and supports a variety of fish species. Just upstream, at the UNESCO World Heritage Site of Fountains Abbey & Studley Royal, Brown Trout *Salmo trutta*, Chub *Squalius cephalus*, European Eel *Anguilla anguilla*, and Stone Loach *Barbatula barbatula* have been recorded. White-clawed crayfish *Austropotamobius pallipes* are also still present in some sections of the river, although the invasive Signal Crayfish *Pacifastacus leniusculus* is present downstream in the Ure and is eventually likely to colonise the Hell Wath section. There are about 15 common butterflies recorded near the site and 152 species of moths recorded in the 1km square SE3070 which encompasses most of the reserve. However most records are more than 25 years old. Because of the urban location it is not considered that moth trapping will be feasible unless we can find secure sites for equipment.

References: National Trust website: <https://www.nationaltrust.org.uk/fountains-abbey-and-studley-royal-water-garden/projects/the-skell-valley-project>

Maps: 1:50 000 OS Landranger Sheet: 99 Northallerton & Ripon. 1:25 000 OS Explorer Sheet: Nidderdale 298.

Previous YNU visits to the area:

1) Ripon/Valley of Skell (06/05/1905); Circular No. 186, YNU Trans. Suppl. (1908) 34: *The Naturalist* (1905) 30: 175-182.

2) Ripon/Valleys of Skell & Laver (05-07/08/1933); Circular No. 378 *Nat.Suppl.* (1933) 58; *The Naturalist* (1933) 58: 231-237.

Circular No. 926

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The VC65 Meeting will be held on Saturday 24th June to Hackfall Woods and Nutwith Common Woods.

Maps: 1:50 000 OS Landranger Sheet: 99 Northallerton & Ripon
1:25 000 OS Explorer Sheet: Nidderdale 298.1:50,000 Geological Survey of England & Wales
New map series, Masham 51

The Yorkshire Moths group are invited to meet on the Friday evening to trap in the extensive Nutwith Common Woods.

Meeting Place: The small car park for Hackfall (SE23077750) is close to the southern entrance to Nutwith Common. There is some scattered roadside parking towards the northern entrance. There are no toilet facilities, the nearest being at Grewelthorpe or Masham.

Tea and Meeting: This will be at 4pm in the Hackfall Cafe, Grewelthorpe Village Hall (HG4 3BU). There will be a modest charge for refreshments.

The area: The area to be visited straddles the VC64-65 border with most of western Hackfall in VC64 whereas all but the southern margin of Nutwith Common woodlands are in VC65. The land above about 110m is mainly farmed land derived from common that was extensively enclosed, especially since the seventeenth century. Situated aside the Thorpe Road to Masham, Roomer Common is still un-enclosed but much reduced in area and is small residual part of a once open landscape. The woodland to the south, Nutwith Common, was once part of this medieval 'stinted pasture' common land until it was enclosed. It is now commercially forested as part of the extensive Swinton Estate. The two wooded areas we can visit present a striking contrast: Hackfall is a 45ha Site of Special Scientific Interest (SSSI), which sits on both sides of the River Ure as it runs through the Hackfall Gorge. It was designated because it was considered important as a largely undisturbed example of ancient semi-natural broad-leaved woodland. This old growth woodland with its large variety of flora over a mixed geology holds a valued resource of plant life. The Rowell Walk, a long distance path, passes through the length of the woodland close to the eastern banks of the river. The recommended entrance to the eastern part is from the car park from which three main paths depart. This is also close to one of the three entrances into the Nutwith Common woodland on the other side of the road. Despite the greater attractiveness of Hackfall we are hoping that the group will concentrate on recording in VC65 Nutwith Common Woods as they are woefully unrecorded.

Nutwith Common: The Fountains Abbey Estate was divided from the land of the Fountains Grange of Bramley along the valley known as Hutts Gill. It is thought that Nutwith was a wooded area which was eventually cleared and later it was given to Fountains Abbey. The monks let the land off to tenant farmers who lived in scattered farms rather than near the nucleated village of Grewelthorpe. Much later most of the commons were enclosed and Nutwith became estate-managed woodland and periodically felled, recently during and after WWII. It was

largely replanted around 1960. The denser and more mature tree stands are currently being progressively harvested, thinned and replanted again in an effort to enhance the diversity and amenity value. Nutwith is now part of the extensive Swinton Estate which has been in the ownership of the Cunliffe-Lister family since 1888, when Samuel Cunliffe-Lister, bought the estate on retiring from his woollen empire in Bradford. Subsequently the descendants were to become politicians, many enobled by the Conservative Party. The current owner is the fourth Earl, Mark Cunliffe-Lister, who succeeded his father in 2021 and unlike his predecessors he manages the estate full time.

Geology: The River Ure in the Hackfall Gorge has cut deeply through the Upper Carboniferous geological strata of the Millstone Grit Series (Kinderscoutian R1Stage), roughly following a north west-south east fault zone of limited throw which disturbs the gentle regional dip to the east. Structurally the faulted block immediately to the east of the river at Hackfall appears to be a typical 'horst', a raised fault block bounded by normal faults. The whole area above around 120m OSL is mainly covered by a thick layer of glacio-fluvial deposits, consisting of sand, gravels and rounded boulders. This lies on top of a strong sandstone layer, the Lower Brimham Grit, which outcrops in places along the edge of the gorge. Below this gritstone is a series of weaker rocks which have been weathered away over time to form a steep slope of shales, mudstones and sandstones. The topmost soft layer is the Ure Shell Bed, which is rich in marine fossils, and was described by Wilson & Thompson (1965) as 'a grey siltstone composed of clastic quartz, flakes of muscovite, biotite and chlorite.' River erosion and land sliding have caused boulders from the upper gritstone sequence to slide down the slope towards the river bed. This part of the slope is composed of Libshaw Sandstone, a typically brown and fine-grained rock with a mottled appearance due to kaolinized feldspars. Under this area is the Cayton Gill Shell Bed, a loose agglomeration of mudstones, with beds of siltstone and sandstone several metres thick. Rich in shelly fossils, it is the oldest sequence in the gorge, exposed at the base of the western bank. One of the most striking geological features of Hackfall is the plentiful supply of tufa, associated with a number of calcareous springs. The tufa was used in building the woodland follies and burned in lime kilns near Limehouse Hill (SE235776). The thin coal seam, within the Ure Shell Bed, was mined on a small scale. Slightly further west in the north-eastern part of Nutwith Common Woods, the Winksley Sandstone and the Laverton Sandstone are close to the surface and these sandstones mark the transition to the Lower Coal Measures which have been largely eroded away.

Habitats: The main habitats in the area are deciduous woodlands both ancient and modern, surrounded by small fields of improved grassland, and cereals. These fields are enclosed by fences and lengths of neglected hedgerow. Along the Thorpe Road, the wide roadside verges have old scrub bushes that include hawthorn and willow. There are some roadside walls and hedges to the farmland but Nutwith woodland is largely unfenced from the road. A couple of small ponds and seepages are present on the margins of Nutwith whereas in Hackfall there are extensive springs, small streams, artificial ponds on the gorge slopes as well as the large River Ure at the base. Hackfall is extremely habitat-diverse with Ancient Semi-Natural Woodland, dead and decomposing wood, grassland, wetland, cliffs, rocks and boulders, walls and structures, fluvial and riparian habitats with sand, shingle and flood debris. The ancient woodland was extensively felled in the 1930s, and much of the present tree cover has naturally regenerated since then. It features a diversity of localised species and many common ones. Hackfall Wood is ecologically unusually rich and is well recorded. In contrast the adjacent Nutwith Common

on the higher ground to the West is young mixed plantation woodland mainly planted during the last 60 years. It contains a wide variety of mainly deciduous tree species but there are large areas of closed canopy Beech *Fagus sylvatica* and Hornbeam *Carpinus betulus* woodland and some large areas of young Silver Birch *Betula pendula* and there are some stands of old conifers, Scots Pine *Pinus sylvestris* with a few firs and European Larch *Larix decidua*, in the areas closer to the road.

In Hackfall Woods plants grow in distinct associations according to the underlying geology. For example, around the Brimham Grits cliffs and steep slopes the soil is acidic, and woodland trees are Holly, Rowan *Sorbus aucuparia*, Beech, Scots Pine, and Wych Elm with a predominant canopy of silver Birch and Sessile Oak *Quercus petraea*. On the woodland floor are Hard Fern *Blechnum spicatum*, Wavy Hair-grass *Deschampsia flexuosa*, Small Cow-wheat *Melampyrum sylvaticum*, Heather *Caluna vulgaris*, Bilberry *Vaccinium myrtillus* and Great Wood-rush *Luzula sylvatica*. Under the less steep slopes near the Ure Shell beds, the soil is less acidic. Among the herbaceous plants there are Herb Paris *Paris quadrifolia* and Toothwort *Lathraea squamaria* and a range of other woodland floor plants. This ground flora is described by Natural England as 'characteristic of old, established woodland.' Above these, the understorey contains Hazel *Corylus avellana*, and Guelder Rose *Viburnum opulus*. Above this is a canopy of Sycamore, Wych Elm and Ash. Opposite-leaved Golden-saxifrage *Chrysosplenium oppositifolium* and Wood Sorrel *Oxalis acetosella* are also present in Spring.

This site has many pools and streams, resulting from a series of calcareous springs, which give rise to extensive flushing. On the wettest ground commoner plants include Great Horsetail *Equisetum telmateia* and Meadowsweet *Filipendula ulmaria*, below a canopy of Spindle *Euonymus europaeus*, Bird Cherry *Prunus padus* and alder. Beside the streams, on steep sides and rocks, are many bryophytes, and ferns such as Male Fern *Dryopteris filix-mas*, Common Polypody *Polypodium vulgare* and Hart's tongue *Asplenium scolopendrium*. Many Wych Elms at the northern end were lost to dutch elm disease, leaving clearings full of Rosebay Willowherb, bramble and Bracken. The southern end is more fortunate in having Wood Fescue *Festuca altissima* which has a very local distribution in Great Britain. This grass grows on cliff faces above the River Ure. In the woods nearby are many Small-leaved Lime *Tilia cordata*, some of which have regenerated from 18th century plantings.

Harrogate and District Naturalists' Society have recorded 202 liverworts and mosses and 24 bryophytes including *Pseudotaxiphyllum elegans*, *Orthotrichum pulchellum*, *Thamnobryum alopecurum*, *Mnium hornum*, *Eurhynchium striatum* and *Orthotrichum affine*. About 20 butterflies have been recorded near both the sites but the wider area away from Hackfall is practically unrecorded. Little is known of invertebrates in the VC65 parts. The recording difference between the two areas is exemplified by 515 species of moths being recorded in the 1km square SE2377 in VC64, which includes most of Hackfall, but only 12 to 48 species of moths are recorded in the four adjacent 1km squares encompassing Nutwith Common and further north to Roomer Common. Recorded in Hackfall are the uncommon beetle, *Platycis minutus* and the Lemon Slug, a creature of ancient woodland and also the Clouded Magpie *Abraxas sylvata* an uncommon moth now declining, due to its dependance on elm. Because of their recent history Nutwith Common woods are very depauperate, especially in their understorey and ground flora. The most recently replanted parts now contain a wider variety of deciduous trees including Oaks *Quercus robur* and *Q. petraea*, Beech and European Larch

and Rowan. Some of the biggest, oldest, trees are on the higher parts which is dominated by even-aged Beech with a few Hornbeam and some areas have large Scots Pine and a few Spruce. The closed canopy of the older growth areas allows little in the way of ground cover. There is a considerable amount of standing dead wood, mainly stumps. Where clearance has opened up the canopy there is a rank species-poor ground vegetation dominated by bracken and tufted hairgrass, *Juncus* spp., a few other ferns with abundant foxglove, bramble *Rubus* spp., and Dog's mercury. At the southern woodland edge are two small ponds, fringed by *Glyceria* spp. and bordered by *Juncus* spp. and Meadowsweet but a vergeside pond marked on OS maps as near the northern entrance, has disappeared.

Health and safety: Wear appropriate footwear. There is no easy access into Hackfall Woods, due to rough terrain and steep paths which start near the car park, but access to Nutwith Common [woods] from the two entrances on the Thorpe Road is by relatively level tracks and small paths in open woodland.

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Woodland Trust website: <https://www.woodlandtrust.org.uk/visiting-woods/woods/hackfall/>

Previous YNU visits to the area:

- 1) Hackfall (15/06/1912); Circular No. 238, *YNU Trans. Suppl.* (1913): 35.; *The Naturalist* (1912) 37: 246-252.
- 2) Hackfall/Mickley Woods (08/06/1968); Circular No. 643, Separate; *The Naturalist* (1968) 93: 121-122.

Circular No. 927

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VC61 excursion to Hornsea Mere on Saturday 1st and Sunday 2nd July 2023.

Meeting Place: We will meet at Wassand Road, TA171466 near the entrance to the grounds of Wassand Hall at the western end of the Mere at 10.30am. Wassand Hall is located between Seaton and Hornsea, about 12 miles east of Beverley and 18 miles north of Hull. When driving from Seaton towards Hornsea on the A1035 (formerly B1244), the turning to the Hall is the first right after Seaton village. The lane is not signed, but comes immediately after a left turn signposted Bewholme, and it has a triangle of grass at the entrance. For those driving from the East on the A1035, the turning is the first on the left after Seaton Garage. There is a regular bus

service between Hull, Beverley and Hornsea, but you may need to ask the driver to stop by the entrance to the lane. We will be able to use toilets in the grounds.

Maps: 1:50 000 Landranger Sheet 107 Kingston upon Hull. 1:25 000 Explorer Sheet 295 Bridlington, Driffild and Hornsea.

Tea and Meeting: We will meet in the education room at Wassand Hall at 16:00 both Saturday and Sunday. Self-catering facilities will be available for tea/coffee and cakes. Members will be able to request the use of the bird hide located on the west side of the lake (£5 per person) and/or visit the grounds, gardens and woodland Picnic area (£7 per person).

Health and safety: Biting midges and mosquitoes are a feature of the mere in July, especially on calm days, attracting plenty of hirundines (and hence Hobbies) but also making a nuisance for the naturalist, so come prepared!

The area. Hornsea Mere is Yorkshire's last remaining mere and its largest natural freshwater lake, with an extension of 130 ha and 1.3 miles in length. It is low-lying, less than 5m above sea level, and shallow, with a maximum depth of about 2m. The lake is of post-glacial origin and lies in a depression on glacial drift by morainic lines deposited by the glacial advances, one of these creates a peninsula (Kirkholme Point) and island (Swan I.). Peaty deposits indicate its formerly larger size, which was reduced due to sea incursion. These have caused the demise of several meres in Holderness lying by the coast. There are several inflow streams and a single outflow, Stream Dyke, which discharges to the sea via a sluice that controls lake level. The waters are eutrophic, slightly brackish and highly alkaline. A belt of vegetation surrounds the lake with extensive stands of reedbed swamps, fen and carr. The lake is a SSSI and a Special Protection Area (SPA) for aquatic plants, adjacent habitats and wintering and breeding bird populations, although it is in unfavourable condition due to excessive nitrogen and phosphorus levels. The lake has become more eutrophic during the last century, with the loss of aquatic macrophytes, particularly charophytes from the 1920s. Despite this, the lake holds a rich crustacean fauna. Bird species of interest include Mute Swan (large moulting flock in summer), Reed Warbler, Cetti's Warbler, Gadwall, Goldeneye, Pochard, Shoveler, and Tufted Duck. Other highlights of the lake include a large number of Little Gulls in the late summer/autumn. Migrating Osprey, resident Marsh Harriers and summering Hobbies are all present. Cuckoo breeds here and Bittern and Great White Egrets can be seen. In the winter, Long-tailed Ducks, Scoter, Scaup and Red-throated and Great Northern Divers can be present on the lake. Otters appeared absent when Bolam visited in 1912, but scattered records suggest recolonisation from WWI, with confirmed breeding in 1947. The YNU has visited Hornsea Mere on numerous occasions, the last time in July 2007.

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Circular No. 928

Divisional Secretary VC62 Sarah White, 16 East Riverside Drive, Dumfries DG2 7HF
Tel: 07775 853478 Email: white.priests@gmail.com

The VC62 Meeting will be held on Saturday 22nd July at The Forest of Flowers Rewilding site, Huby.

Maps: 1:50 000 Landranger Sheet: Malton & Pickering 100
1:25 000 Explorer Sheets: Ripon & Boroughbridge 299

Meeting Place: We will meet at 10.30 am at Home Farm, Huby YO61 1JB SE544654.
Home Farm is on the north side of Baston Lane halfway between the A19 junction and Huby village. After leaving the A19, travelling east towards Huby, look for the entrance on your left, soon after passing Burn Hall and the Bird of Prey Centre. If you are able to do so, it would be very helpful if you could book to attend this meeting on the events page using the following link (<https://tinyurl.com/vc62event>). All that is required is your name and email address. This enables us to plan for providing tea and cake. However, if you cannot book online, or decide to attend at the last minute, please don't worry and just come anyway!

Tea and Meeting: This will be at 4 pm in the orchard at Home Farm, with tea and home-made cakes kindly provided by Tom and Alwyn.

The Area: This rewilding site comprises 74 acres of farmland at Home Farm, Huby in the Vale of York and is managed by Alwyn Craven and Tom Hook. Previously farmed by Alwyn's family as a mixed arable and sheep farm, since 2015 the new aim has been to return the land to nature and create a sanctuary for wildlife. This has been achieved by planting 42,000 native trees and shrubs together with 35 species of wildflowers. Pasture and arable fields have been replaced with wildflower meadows and developing woodland in which rides and glades provide open space and a diverse structure. Since 2019, 17 new ponds have been created, including 7 specifically for the Great-crested Newt. Regular butterfly surveys have been conducted in recent years, and in 2020 the site recorded the largest number of butterflies in Yorkshire, reflecting the abundant source of nectar and foodplants which have been created. An extensive range of traditional farm buildings offer shelter and nest sites for birds. Monitoring on the site has so far recorded:

14 species of dragonfly and damselfly, including Willow Emerald Damselfly;

23 species of butterfly, with large populations of Ringlet, Meadow Brown and Gatekeeper, as well as smaller numbers of Purple Hairstreak, White-letter Hairstreak, Wall Brown, and Brown Argus. Monitoring data is available here:<https://www.yorkshirebutterflies.org.uk/recording/transect-reports/forest-of-flowers-huby>.

135 species of moth, including Scarlet Tiger, Hummingbird and other hawkmoths.

Birds: Willow Warbler, Whitethroat, Marsh Tit, and many others are seen on site. Lots of birds of prey have been recorded, including Kestrel, Buzzard, Tawny and Barn Owl, and until 2021 the site had a breeding pair of Peregrine Falcons.

Mammals: A Harvest Mouse has been found, and the site has a large number of voles, mice and other rodents.

Spiders and invertebrates are largely unrecorded, so any support in this area would be much appreciated.

Not only does this site provide a wonderful range of habitats for wildlife, but wildflower seeds are also produced and supplied to other rewilding projects across the UK. In addition, Alwyn and Tom aim to become as self-sufficient as possible, growing their own organic fruit and vegetables, keeping goats and ex-battery chickens, and bees for wildflower honey.

References:

<https://www.forestofflowers.co.uk/>

Circular No 929

Divisional Secretary VC63: Joyce Simmons, 16 Springfield Crescent, Kirk Smeaton, Pontefract, W. Yorks WF8 3LE Tel: 01977 620725; email: joyce@gentian.plus.com

The VC63 excursion will be to Potteric Carr YWT Reserve on Saturday 12 August 2023

Maps: OS Landranger 111 1:50000 Doncaster

OS Explorer 279 1:25000 Doncaster

Meeting Place: Meet at 10.30 in Potteric Carr Visitor Centre, which has toilets and cafe. The car park is at SE588008, post code DN4 8DB. From the A1 take the M62 east and leave at junction 3 on the A6182 towards Doncaster. At the traffic lights turn right, and then right again into the car park. YWT, an affiliated member of YNU, will kindly waive entrance fees for non-YWT members.

Reporting Meeting: In the Potteric Carr Visitor Centre (inside or outside) at 4pm. Please note that the cafe closes for service at 4pm, and the car park is locked at 5pm. So please obtain refreshments before 4pm so that we can start the reporting meeting promptly.

The area: When the M18 was scheduled for building it was to pass through this well-known wildlife rich area. Due to the tireless opposition led by Roger Mitchell and volunteers the new road was re-routed and now forms the current southern boundary of most of the reserve. Many railway lines criss-cross the wetlands, with a major railport to the south and Doncaster station to the north. Despite these industrial features the reserve is remarkably tranquil. It now covers 220 Ha but is due to increase in the future, perhaps to 350 Ha, with the addition of mitigation land. Potteric Carr is a relict fenland, fed by ground water and run-off from the Magnesian Limestone hills to the west, and therefore is slightly alkaline. Peat which has formed in some areas is from sedges, not sphagnum. There are woodlands, grasslands and many water bodies of various depths, some of which could be dry at the time of our visit. Hides overlook the deeper lakes. Some wetlands are managed for breeding birds, some for dragonflies (Black Darter *Sympetrum danae* breeds here, despite it not being an acidic site). Bearded Tits have moved into the *Phragmites*, Bitterns have bred here for several years and last year a pair of

Black-winged Stilts raised 4 young. At the time of the Excursion the bird breeding season is over and so it will be possible to visit areas normally closed to the public.

The plant life is varied. Peaty and mildly calcareous damp areas support, for example - Marsh Valerian *Valeriana dioica*, Parsley Water-Dropwort *Oenanthe lachenalii*, Lesser Water Plantain *Baldellia ranunculoides*, Water Violet *Hottonia palustris* and Brookweed *Samolus valerandi*. There are many sedges such as Bottle Sedge *Carex rostrata* and Yellow Sedge *Carex* sp. It is hoped that changes in management of some of the open areas will lead to new and interesting botanical and invertebrate findings. Jim Horsfall, YWT reserves Team Leader (S. Yorks) will lead a 3 mile walk through restricted areas but these will be available for more detailed study by YNU members. He recommends long sleeves and trousers as mosquitoes and ticks are potential hazards. If you wish to investigate the wetter areas, wellies are recommended.

We will hold a mothing session at Potteric Carr on Friday 11th August, the night before the VC63 Excursion. Trapping will be around the visitor centre, which involves staying with your trap as the security of the area cannot be guaranteed. However, anyone who wishes to trap in a secure area and leave their trap overnight can do so. There is a secure compound in the middle of the reserve. Arrangements for this can be made but we must know in advance as keys for locked areas will be required.

If you wish to trap at Potteric Carr please get in touch with Joyce Simmons, contact details above.

See also the article on the flora of Potteric Carr by Jim Horsfall on p23, and the Back Cover.

NOTICE: YNU Library & Archive

When the North & East Yorkshire Ecological Data Centre had to vacate their offices (which we share) in the centre of York at short notice last autumn, the YNU library had to be boxed up speedily. This provided an ideal opportunity to become familiar with the extent of the library, albeit, in the time available, at a superficial level. Unboxing and sorting it at a more leisurely pace in the NEYEDC offices at Dunnington is now under way.

The library contains an eclectic mix of YNU publications and material mainly donated by YNU members or, when deceased, by their families. There are copies of other natural history journals (sometimes bound), a very wide variety of natural history textbooks, both temporally (from modern to mid-Victorian) and spatially (from Yorkshire to the Birds of the Falkland Islands via the Flora of Syria, Palestine and Sinai!), together with natural history records (card index systems, lever arch files, pocket files etc. etc.) from many notable Yorkshire naturalists. Visits by YNU members to the library when it was based in Minster Gates have not been frequent and have been estimated at around five or six a year on average.

Currently there is no YNU librarian and no guarantee that one will be available in the near to medium term. Because of the continuing problematic upkeep of the library and relatively low level of usage the Executive has been considering its future and has developed a provisional

strategy which it wishes to share with YNU members:

- 1) Sets of YNU publications, material pertaining specifically to Yorkshire and the North of England and any material that assists with the identification of taxa should be retained. The possibility of a centre for YNU members and others interested in the study and identification of Yorkshire's natural history has been mooted for the longer term.
- 2) Single copies of all YNU publications, any internal documents, historical records etc. and relevant material from affiliated societies should, ideally, be held in an official archive, where they can be safely conserved, providing there is appropriate access for people to study them. There have been preliminary and constructive discussions about this with the Borthwick Institute, York University.
- 3) Other books and papers with a natural history link, but no particular Yorkshire relevance or value for taxa identification, should be disposed of, e.g. if of commercial value sell them to a Natural History book dealer, if not, give them away.

The Executive is happy to receive any comments YNU members might have on the above. Please write to or email the Chair (contact details on the inside of the back cover).

Andy Millard

Errata

1. Goulder, R. (2022). Aquatic plants in village ponds of the Yorkshire Wolds and their eastern margin. *The Naturalist* 147: 180-194.

p. 181. The final paragraph consists of two original paragraphs that have been conflated and randomly reorganised. They should appear as follows:

It is also possible that some ponds, formed at the end of the glacial period, became filled by silt and encroaching vegetation over millennia, but survived as damp or boggy areas that people later dug out to make a pond. Village ponds are likely to have been maintained by periodic clearance of silt over the centuries. For example, the East Yorkshire antiquarian J.R. Mortimer (1825-1911) wrote about the removal, in the dry summers of 1826 and 1884, of three to six feet depth of mud from the bed of the Low Mere at Fimber (Mortimer, 1888-1890). He also describes how the exposed clay bed showed signs of ancient digging. The find of an Anglo-Saxon, or possibly Romano-British, iron spearhead, beneath about 2 feet of mud, suggested that the 19th century clear-out was the first for many centuries. Several feet of mud were again removed from this pond in the dry summer of 1995 (Austin et al., 2001).

It is certain that village ponds are long-standing features of the landscape that have historically been a vital source of water. Allison (1976) reviewed evidence of prehistoric and Romano-British settlement in East Yorkshire and of later colonization by Angles and then Danes. His view was that, by the time of the 1066 conquest, settlements had arisen as wooden or earthen dwellings clustered around a church and close to a water supply, which was often likely to be a pond. All the ponds considered in this article (Table 1) are associated with places that feature in the 1086 Domesday Book (Anon., 1999-2019) except Fimber which was possibly overlooked. Neave & Neave (2008) believe that Fimber dates from the Anglo-Saxon period. Furthermore, nine of the ponds are labelled as 'meres' by 1890s OS maps (Table 1), and Fridaythorpe has

a 'Mere Farm', an appellation which suggests that they were features of the Anglo-Saxon landscape (Crawford, 1970).

pp. 188-189, Figures 4 and 5. The photographs need to be transposed.

2. On page 219, in the Excursion Reports from Jervaulx Park, a section of the Diptera report was attributed to Derek Whiteley, when this was not so. His original report terminated with ...*Limnia unguicornis*. The photograph of a crane fly should have been labelled as *Tipula vernalis*, which was present in good numbers in Jervaulx Park on the day. It appears that the wrong photograph was submitted.

3. In The Naturalist 1111 the caption for the front cover image should read 'Lateral view' and that for Figure 2 on p177 should read 'Ventral view'.

The City Nature Challenge 2023 is coming to Hull!

The City Nature Challenge is a global nature-recording event taking place from Friday 28th April – Monday 1st May 2023. A four-day bioblitz event, the challenge started in 2016 and has grown exponentially, from 2 cities participating in its first year to 445 cities and 1.7 million observations in 2022. The challenge encourages people to discover the biodiversity on their doorstep, make useful biological records, and engage in some friendly competition with cities around the world.

This year, NEYEDC is leading the organisation of Hull's first ever City Nature Challenge with the help of a team of local partners. Our aim is to promote the collection of biological data across the city and encourage people to connect with the nature in their local green spaces, back gardens, nature reserves, urban spaces, and more. Observations from the City Nature Challenge will also support local efforts to look after wildlife in the area and help inform local decision making.

Anyone can get involved! To take part, simply download the iNaturalist app to your smartphone or other device, and start making observations. Take a photo or a sound recording of any wild flora or fauna you spot, and submit it via the app. If you're unable to identify your species, iNaturalist's online community can help. Any records made within the City of Hull boundary via iNaturalist during the course of the weekend will automatically be added to NEYEDC's iNaturalist City Nature Challenge Project page. After the four-day event, we will process and verify the project records before releasing the results for our city! If you do not wish to or cannot use iNaturalist, you can also submit your records using our Species Recording Form.

Though you can record anywhere across the city during the long weekend, our partners will also be holding free events at three sites across the city on Saturday 29th April, these will include bioblitzes and nature walks, which will give you great opportunities to make your observations and explore the city! These events will also host taxonomic experts who can help you identify your finds and provide help and support in using the iNaturalist app. Details of these events will be released in due course. For more information, useful links, and FAQs, see the Hull City

Nature Challenge 2023 website (<https://www.neyedc.org.uk/hull-cnc-2023>) or email events@neyedc.co.uk to find out more.

Notes on the discovery of insect illustrations by Dr Peter Skidmore (1936-2009)

Colin A. Howes

Introduction

During 2022, the author was invited to assist in sorting out the natural history archive office at the Chequer Road premises of Doncaster Museum (now referred to as Heritage Doncaster, Archives and Local Studies). The office had been vacated since September 2008, and had inevitably been used to store overflow materials from offices elsewhere in the building.

Excavating through tangles of discarded office furniture, boxes of files, books, scientific journals and a miscellany of educational props from seasons of classroom work, revealed three miscellaneous stacks of panels. These included conference poster displays and artwork salvaged from numerous dismantled natural history exhibitions. Amongst this was a fibreboard panel featuring a group of six insect illustrations painted directly onto the board (see Figure 1 p76) by my late colleague Dr Peter Skidmore, Keeper of Natural Sciences (1965-1994).

The display featured the results of the forensic identification of insect fragments extracted from what was described as “a large batch of Little Owl *Athene noctua* pellets collected from a site (un-named) near Doncaster.” The insect species present were: -

- 1) *Dolerus gonager* - A grass-feeding Sawfly which flies during the day in May and early June.
- 2) *Harpalus aeneus* - *affinis* - A common ground beetle of sandy soils.
- 3) *Forficula auricularia* - The Common Earwig.
- 4) *Philopodon plagiatus* - The Sand [Marram] Weevil. Feeds on grass roots in dry sandy areas.
- 5) *Byrrhus pilula* - A Pill-beetle which feeds on mosses growing on the ground.
- 6) *Typhaeus typhoeus* - The Minotaur Beetle. Feeds mainly on rabbit dung in sandy places and flies at night.

From the habitat preferences, circadian activity periods, seasonality and food requirements of the identified prey species, the following description of the owl’s hunting terrain and methodology was constructed: -

“... the bird hunted over open sandy grassland during May or early June both at night and during day light, and although Rabbits *Oryctolagus cuniculus* were numerous, prey consisted entirely of insects.”

Although numerous batches of bird pellets had been analysed at the museum and elsewhere during the 1970s, 80s and 90s, few batches of Little Owl pellets were examined in detail and none of those catalogued in the *Bibliography of bird pellet studies in Yorkshire* (Howes, 1998)

matched the pellets forming the subject of the display board. The provenance and date of the pellet contents remain to be discovered.



Fibreboard panel by Dr. Peter Skidmore.

Photo: Nora Boyle

Art work, an outline review

In 1954 Peter studied for an Art Teacher's Diploma at the Oldham College of Art, although as he would argue, his actual artistic leanings were at odds with what was being taught at the time (Howes *et al.*, 2010). On moving to the Manchester biological supplies firm of Flatters & Garnett Ltd his illustrative skills were at once evident in sales catalogues and the figures (18 line drawings) for *British Insects: A simplified key to the orders* (Flatters & Garnett Ltd., 1958).

At Doncaster Museum, where he moved in 1965, his illustrations featured in two museum publications. These were *Sandall Beat Wood Nature Reserve* (Skidmore, 1970) where his 14 line drawings included entomological, botanical and ornithological subjects, and in *Thomas Tofield of Wilsic: botanist and civil engineer 1730-1779* (Skidmore *et al.*, 1981), his three line drawings include one of the Scottish Asphodel *Tofieldia palustris* on the rear cover.

Originally conceived as a Doncaster Museum publication, Ted Rimington's (1992) *Butterflies of the Doncaster District* was ultimately issued by the Sorby Natural History Society and Sheffield City Museums. This landmark historical study formed a vehicle for nine butterfly portraits by Peter, all based on local specimens from the Museum's Lepidoptera collection.

Throughout his career at Doncaster Museum, Peter's talents as an illustrator were abundantly demonstrated in series of natural history displays, particularly those featuring the river Don, Potteric Carr and urban wildlife. His most expansive and painterly works were in a series of large dioramas featuring geological periods from the Cambrian to the Holocene, sadly all now dismantled.

Outside the museum, Peter's entomological artwork featured in a prolific output of research papers, identification keys, educational publications and reports commissioned by government agencies and conservation organisations (see Limbert, 2020).

Developing from his two-volume thesis on the Muscidae of the Western Palearctic, submitted for an MPhil degree at York University, is Peter's most substantial work, *The biology of the Muscidae of the world* (Skidmore, 1985) which contains 160 black and white figures.

A field project initially undertaken in connection with his work for an Open University BA degree, led to the Field Studies Council AIDGAP publication on *Insects of the British cow-dung community* (Skidmore, 1991) which contains 382 black and white figures. Peter's colour portrait of the Viking House-fly *Heleomyza serrata* forms a striking frontispiece of his two-volume doctoral thesis for Sheffield University (Skidmore, 1996), the fly's vernacular name originally coined by Peter in this work. His illustration of the RDB3 Southern Silver Stiletto-fly *Clorimia rustica* features in the report on the species in valleys of the Usk and Monnow in Monmouthshire (Skidmore, 2001), the original artwork being held at Doncaster Museum (Martin Limbert pers. comm.).

Perhaps the most aesthetically pleasing of Peter's published artworks were the 18 coloured plates accompanying *An inventory of the invertebrates of Thorne and Hatfield Moors* (Skidmore, 2006). In 2008, the Thorne & Hatfield Moors Conservation Forum offered 13 of these plates as a set of ten signed and numbered sheets in a presentation folder, and in 2010 these were reissued in Peter's memory. The portrait of the Saltern Tangle-footed Fly *Campsicnemis magius*

from this source has been used as the iconic image on the front cover of Peter Chandler's (2010) *A Dipterists' Handbook*.

Peter's final task was to provide the line drawing illustrations for the identification keys in the two volume *Handbook of the Bees of the British Isles* (Else & Edwards, 2018). However, it was eventually seen that their use would create problems, including losing fine detail when reduced for publication. This led to many drawings having to be set aside for replacement photography. A DVD allows all the Handbook images to be studied at greater magnification (Limbert, 2020).

These landmarks represent a snapshot of Peter's substantial output of entomological illustrations, a gazetteer and retrospective exhibition of which would seem to represent justifiable projects for the future.

Acknowledgements

Thanks are due to Laura Trinogga, Anne Marie Knowles and Peter Robinson of Heritage Doncaster for allowing access to the former natural history archive office. Martin Limbert and Dr Paul Buckland commented on an early draft of this paper and drew attention to additional sources of Peter's illustrations. Bob Marsh searched the DMBC RECORDER database and Nora Boyle of the Doncaster Naturalists' Society photographed the display panel and its component entomological figures for this study.

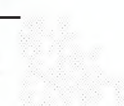
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YNU Calendar 2023

For further details and updates visit the YNU Events Calendar website page (<https://www.ynu.org.uk/events/events>).

Apr	28	The City Nature Challenge nature-recording event in Hull taking place from Friday 28th April – Monday 1st May 2023. See p74 for details.
May	1	The City Nature Challenge Hull continues. See above.
	6	Bryological Section meeting at Frostrow VC65. Meet at 10:00 in the Joss Lane car park, Sedburgh SD65919218. Contact: Tom Blockeel on 0114 2366861.
	13	Botanical Section VC63: Seckar Wood SSSI. Meet at 10:30 in Seckar Wood car park, off Seckar Lane, Wakefield WF4 2LE. Contact: Louise Hill.
	27	YNU Excursion VC64: Hell Wath, Ripon SE302705. See p63 for details
	31	Botanical Section VC65: Marfield Wetlands Reserve Nr Masham. Meet at 10:30 in the car park nr entrance at SE213822. Contact: Linda Robinson.
Jun	7	Entomological Section: Brockadale YWT reserve. Meet at 10am in Brockadale car park SE512174. Kirk Smeaton church is booked at 5pm for discussion and refreshments. For further details contact Derek Whiteley.
	24	YNU Excursion VC65: Swinton Estates - Nutwith Common/Hackfall Woods. See p66 for details.
July	1 & 2	YNU Excursion VC61: Hornsea Mere. Meet on Wassand Road, TA171466. See p69 for details.
	12	Entomological Section Excursion: Semerwater. Contact: Derek Whiteley.
	22	YNU Excursion VC62: 'Forest of Flowers' rewilding site, Home Farm, Huby. SE544654. See p71 for details.
Aug	12	YNU Excursion VC63: Potteric Carr YWT reserve, Doncaster SE587005. Note: Revised date. See p 72 for details.
Sep	16	YNU Executive Committee Meeting. Meet Horsforth, 10.30-12.30.
Oct	7	Bryological Section, Allerthorpe Common, VC61. Meet at 10am in the car park on Common Lane, SE75214734.
	15	YNU AGM in York. Location t.b.c.



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editor@ynu.org.uk

Please look at a recent issue of the journal for a general idea of how to present your article. Also see *The Naturalist* - *Guidance for authors* at www.ynu.org.uk/naturalist and please **avoid** the following:

- using any paragraph formatting and line spacings other than single.
- using tabs to tabulate information (please use MS Word table format).

Good quality, high resolution images are very welcome and should be sent as .jpg files, with a separate MS Word file containing the caption and name of the person to whom the image should be attributed.

If electronic submission is not possible, contributions should be sent to Dr. A. Millard, Woodland Villas, 86 Bachelor Lane, Horsforth, Leeds LS18 5NF (Tel. 0113 258 2482).

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Copy Dates:

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